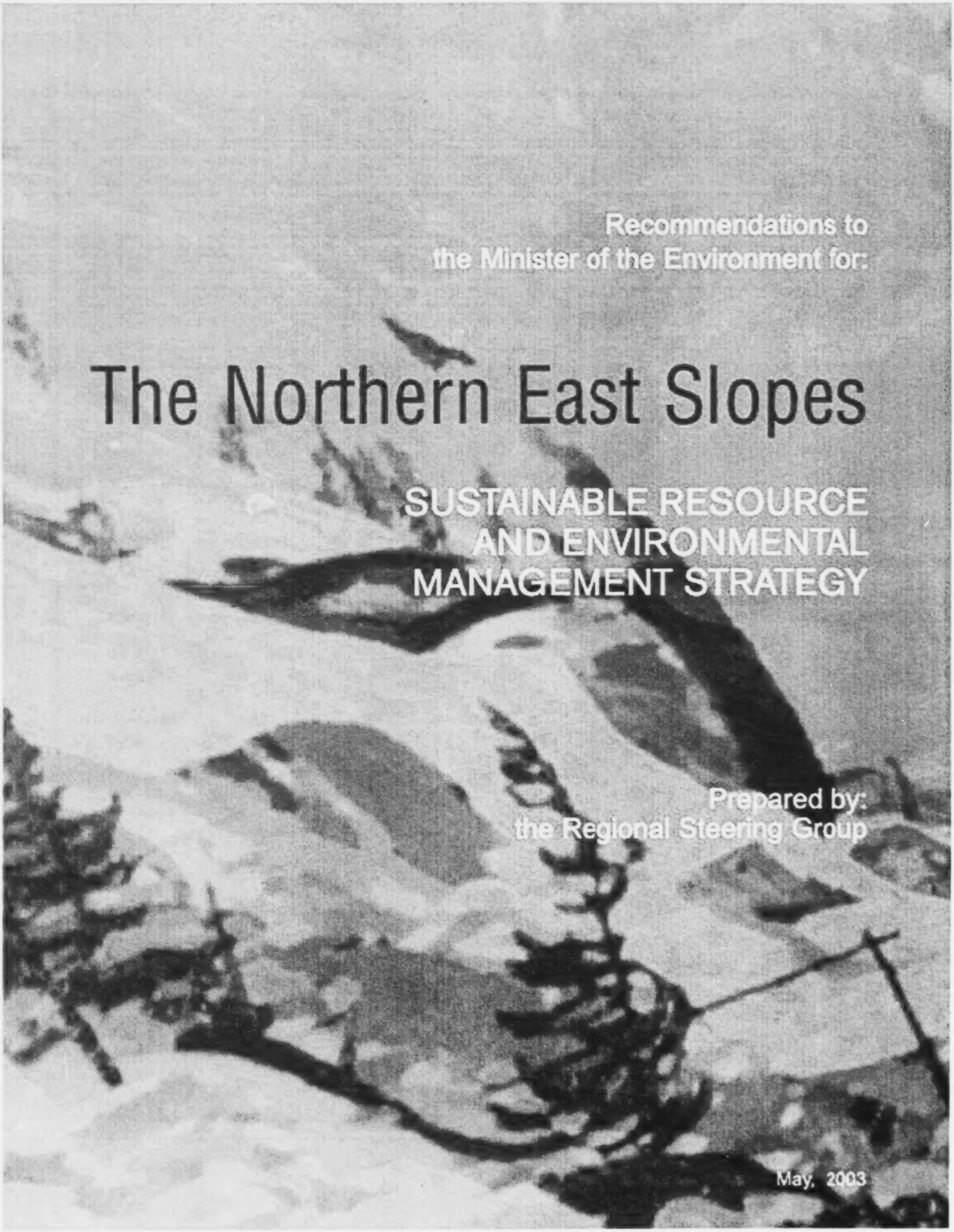

Recommendations to
the Minister of the Environment for:

The Northern East Slopes

SUSTAINABLE RESOURCE AND ENVIRONMENTAL MANAGEMENT STRATEGY

Prepared by:
the Regional Steering Group

May, 2003

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FOOTHILLS MODEL FOREST

The Foothills Model Forest played a significant support role in the development of the Recommendations to the Minister of Environment for the Northern East Slopes Sustainable Resource and Environmental Management Strategy. The economic analysis for the region was conducted in cooperation with Foothills Model Forest and Canadian Forest Service with the modelling work done by PQ consulting. The cumulative effects analysis using ALCES was conducted under a cooperative arrangement between Foothills Model Forest, Alberta Environment and Biota Consulting. Advice on natural disturbance regime analysis and modelling was contributed by Bandaloop Landscape Ecosystem Services through the Model Forest. Mark Storie, in his role as General Manager of Foothills Model Forest, contributed as an advisor to the Integration Core Team. The Aboriginal Task team was also supported by Foothills Model Forest in its discussions with the aboriginal communities, and finally, Foothills Model Forest contributed significant administrative and financial management services to the project over its three-year term.

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Foreword

This document outlines the recommendations of the Regional Steering Group (RSG) for a Northern East Slopes Sustainable Resource and Environmental Management Strategy. The proposed Strategy includes Strategic Directions and associated Actions, which the RSG believes will lead to greater awareness and implementation of integrated resource management principles in the NES region. The directions are consistent with the Alberta Government's 1999 policy statement "Alberta's Commitment to Sustainable Resource and Environmental Management."

The RSG observed that expanding regional industries and emerging concerns often tax the capability of existing processes, demonstrating the need for a more integrated and comprehensive approach to resource management. Industry and communities would benefit from more certainty, as well as streamlined, fair and transparent approval processes. There is increasing interest in, and need for the consideration of the cumulative impacts of multiple activities on the landbase.

Several regional resource management concerns became apparent to the RSG during the NES Strategy development process:

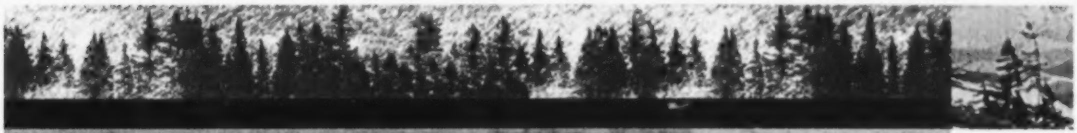
- Increases in oil and gas activity in the western part of the region during the last ten years;
- Pressure from recreational users of motorized vehicles;
- Expansion of forestry and mining operations;
- The importance of resource development to the economic sustainability of communities;
- Increased demand for commercial tourism and recreational opportunities;
- Concerns about some wildlife species;
- More public awareness of resource use and its impact;
- Need for better cumulative effects assessment procedures; and
- Increased concern that Aboriginal perspectives and uses of the land are not being adequately considered in land use decisions.

Despite these concerns, the RSG believes human activity does not require the sacrifice of the region's natural characteristics. Both the energy and forestry sectors are adopting environmentally sustainable management practices. The Government of Alberta has made a commitment to implementing principles of integrated resource management. While significant improvements in resource management have been made, more needs to be done. The NES Strategy is intended to address this need.

The RSG has been impressed by the public involvement in, and contribution to the NES Strategy. Hundreds of people attended open houses, shared their views, and helped shape this regional strategy. Long-term economic and environmental sustainability depends on fostering a collaborative environment in which stakeholders can effectively share both their expertise and concerns. The Aboriginal perspective of local communities and organizations were brought forward and we value that contribution.

Fred Munn,
Chair, Regional Steering Group

Andy Lamb,
Co-Chair, Regional Steering Group



INTRODUCTION

1

Chapter 1 Introduction

BACKGROUND

The Northern East Slopes Sustainable Resource and Environmental Management Strategy was initiated in June 1999. A Regional Steering Group (RSG), comprised of government and non-government members, was appointed by the Minister of Environment in April 2000 to develop recommendations for current and future resource management in the Northern East Slopes region.

The Northern East Slopes of Alberta – a vast and diverse landscape of mountains and rivers, expansive forests, grazing lands, towns, farms and settlements. Abundant natural resources, both renewable and non-renewable, support a strong economy and provide employment and benefits to local communities and to the province of Alberta. The region supports a wide variety of industrial, agricultural, commercial, recreational and Aboriginal uses of the land.

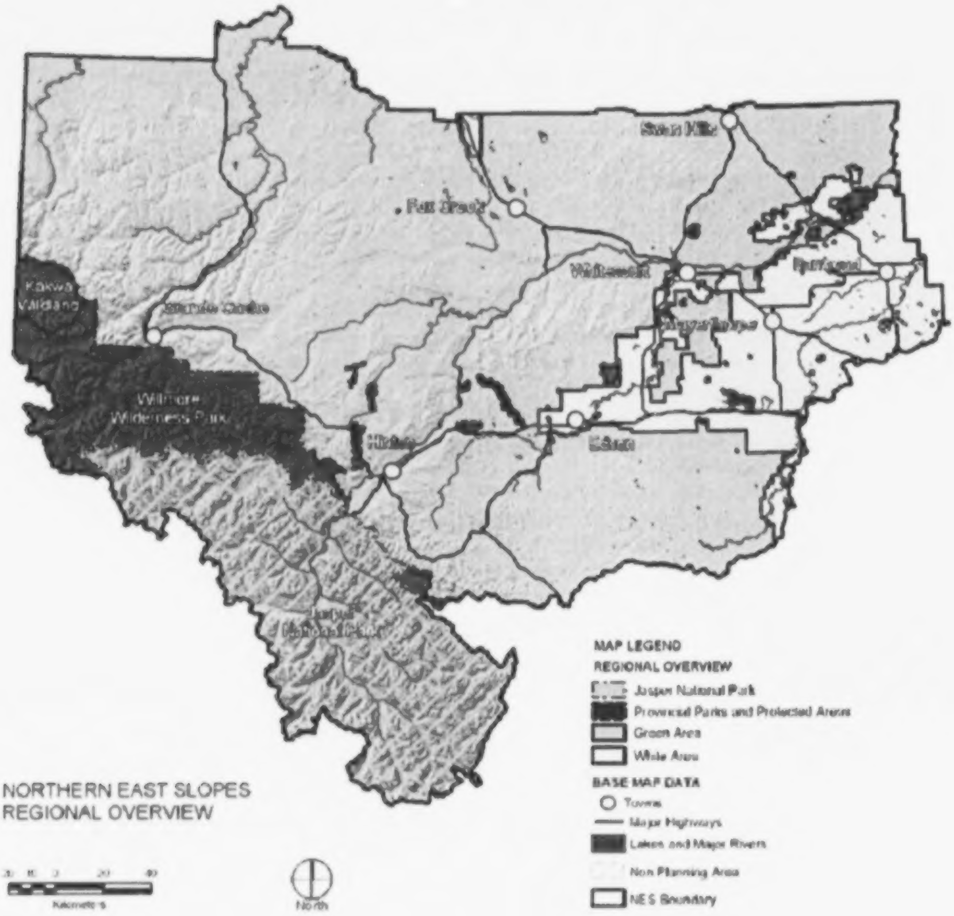
The existing framework for land use and natural resource management has served the region well. However, new challenges require new ideas and innovative solutions. More people, more development, and more activity raise questions about environmental sustainability, the rights and needs of different stakeholders, the future economic viability of different sectors, and the region's ability to adapt to changing conditions. The cumulative effects of activities on other sectors, on communities and on the environment are not well understood, causing uncertainty and potential for conflict between different interest groups.

Faced with these challenges, regional stakeholders and the Alberta government began to look for a better way of preserving what we value. What could people do that would be easier, more economical and, above all, more effective in reaching the vision of a sustainable future? The short answer is integration. Consultation with the public and stakeholders, input from invited regional Aboriginal people, and an analysis of the regional situation, all highlighted the desire for an integrated approach to resource management – an approach that involves government departments, industry and community. The longer answer is found in the vision, values, goals, strategic direction and key actions contained in this *Northern East Slopes Sustainable Resource and Environmental Management Strategy* (NES Strategy).

A cooperative initiative by the Alberta Government and regional stakeholders, the NES Strategy describes an integrated direction to achieve multiple goals. It aims to guide the region toward sustainable development while balancing economic, environmental and community values. Addressing current and emerging issues, the strategy provides clear, long-term direction for managing resources and activities on Crown lands while considering cumulative effects.

SCOPE

The NES Strategy applies to a broad area of land and a long period of time. The strategy covers an area of approximately 7.7 million hectares in the Northern East Slopes region of Alberta. (See Figure 1) The initiative recognizes that environmental management will change and evolve over time, adapting to future conditions. While the recommendations consider the future of at least two generations of Albertans, they are specifically focused on the next 15 years.


Swan Hills
Fox Creek
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Kakwa Wildland
Grande Cache
Mayerthorpe
Willmore Wilderness Park
Hinton
Edson
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MAP LEGEND
REGIONAL OVERVIEW
Jasper National Park
Provincial Parks and Protected Areas
Green Area
White Area
BASE MAP DATA
Towns
Major Highways
Lakes and Major Rivers
Non Planning Area
NES Boundary
NORTHERN EAST SLOPES
REGIONAL OVERVIEW
30 15 0 20 40
Kilometres
North

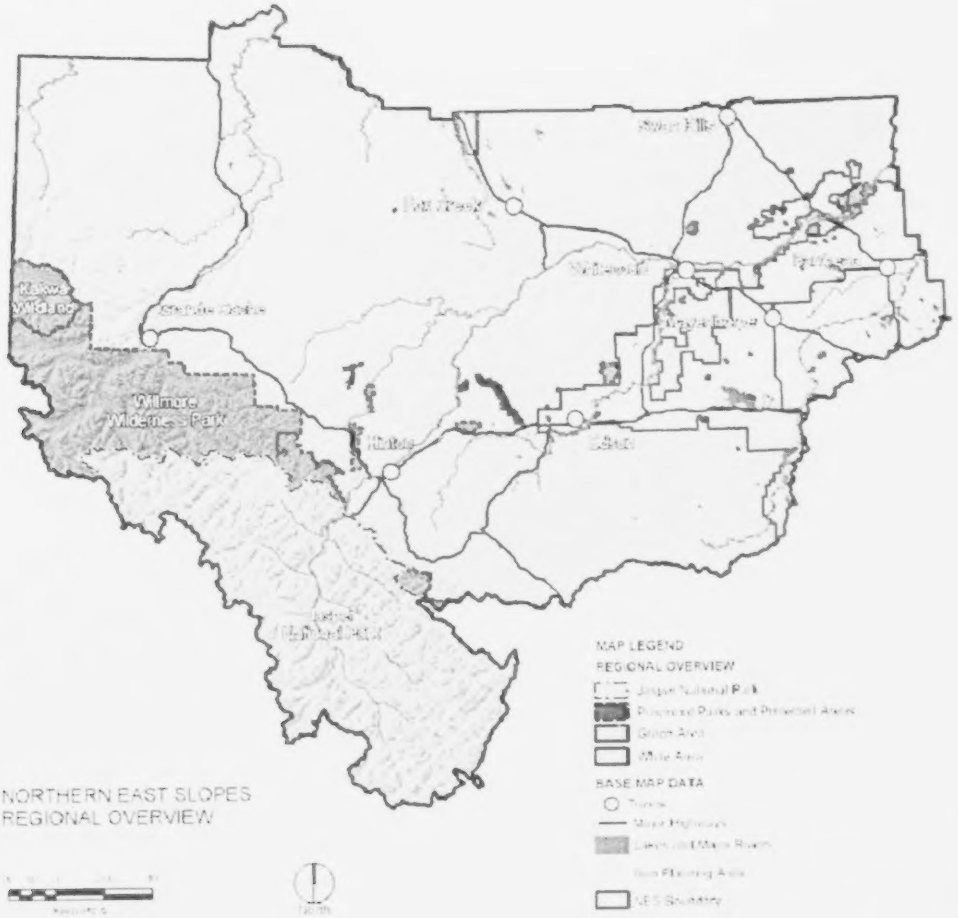
Figure 1: The Northern East Slopes Region.

PRINCIPLES

The following principles from the 1999 Alberta Government document, *Alberta's Commitment to Sustainable Resource and Environmental Management*, guided the Regional Steering Group (RSG) in the preparation of the NES Strategy and the Cumulative Effects Management System.

The use of Alberta's natural resources shall be sustainable.

- Renewable resources shall be managed to ensure their long-term viability and future use potential.
- Non-renewable resources shall be managed in a manner to maximize benefits to Albertans.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- Renewable resources shall be managed to ensure their long-term viability and future use potential.
- Non-renewable resources shall be managed in a manner to maximize benefits to Albertans.

The management of Alberta's natural resources shall support and promote the Alberta economy.

- Natural resources shall be developed to ensure that the optimum value for the resource is obtained and there will be a fair return to Albertans.
- Natural resources will be managed to continue to support Alberta's ability to provide Albertans with health, education and other social and economic benefits, now and in the future.

Alberta's environment shall be protected.

- Alberta's air, land and water shall be protected and maintained for the health and enjoyment of Albertans.
- Species diversity shall be protected and maintained.

Resources shall be managed on an integrated basis.

- Resources such as trees, minerals, wildlife, water, fish, range, public land, and plants shall be managed in a manner that addresses their interdependence and recognizes that the use of one resource can affect other users and other resources.
- Environmental decisions will take into account economic impacts and economic decisions will reflect environmental impacts.

Alberta's natural resources shall be managed for multiple benefits.

- Natural resources shall be managed to provide a range of products and values. For example: forests shall provide (but will not be limited to) timber, wildlife habitat, hunting and grazing opportunities, and related flow of revenue; minerals shall provide (but will not be limited to) nutrients for crop and fibre production, inputs to the manufacture of products, fuel to heat homes and generate electricity, and a flow of revenue to provide education, health care and social services; and water will be available for (but will not be limited to) drinking, recreation, irrigation, industry and fish habitat.
- Ensure access to natural resources is provided. Access includes issuance of authorizations for use, as well as physical access to the resource.

SIX STEPS TO SUSTAINABLE DEVELOPMENT

The following six steps describe a coordinated strategic approach to regional sustainable development:

1. A Regional Vision

In October 2000, the RSG began consulting with the general public and stakeholders on a vision, and a set of values and goals that would balance environmental, economic and community needs. The following reflects that consultation:

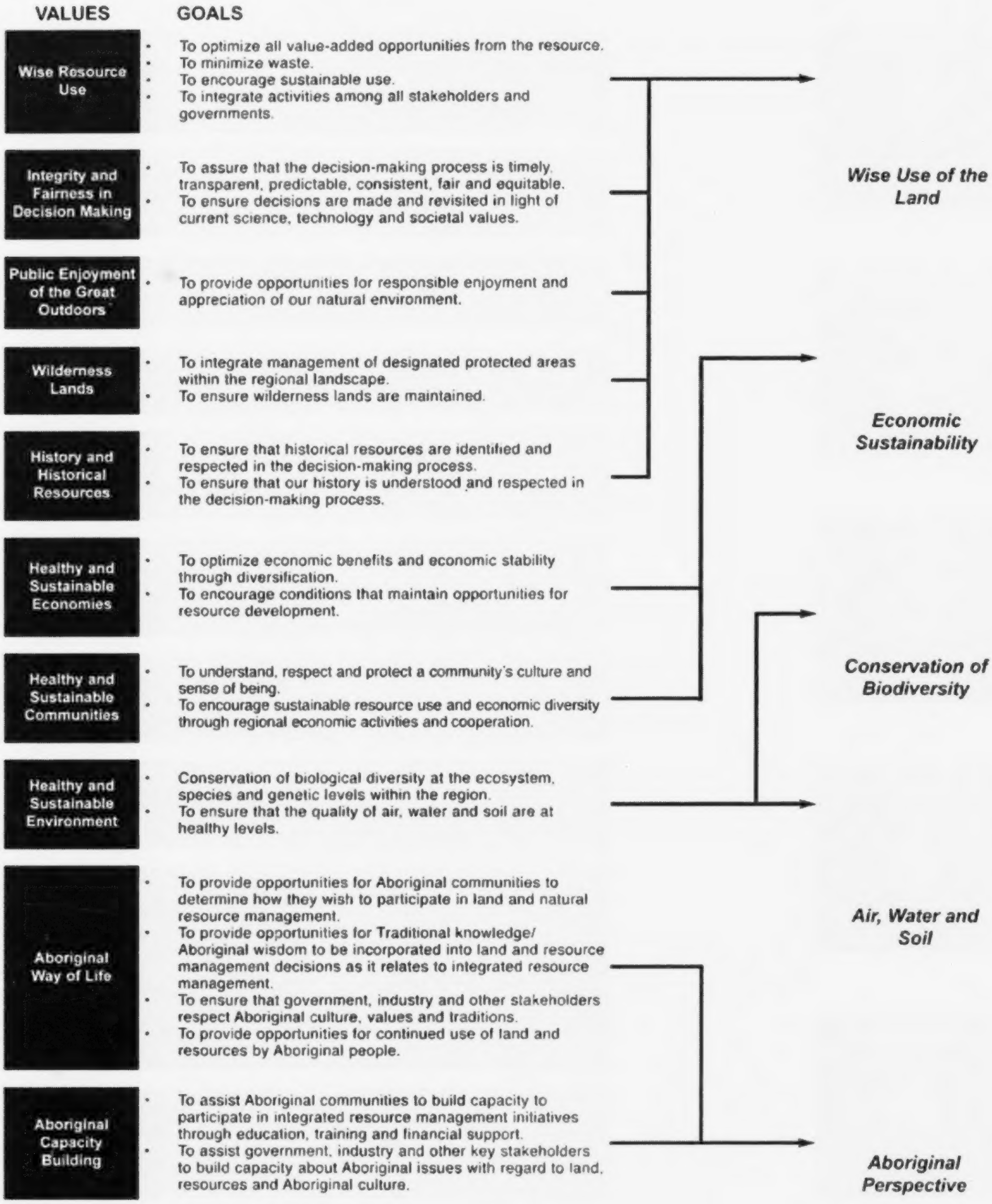
Vision

Integrated management of natural resources in a manner that ensures a healthy and sustainable environment, economy and community that can be enjoyed by present and future generations.

Values and Goals

Through the consultation process, stakeholders and the public identified the following values and goals. The RSG recommends that these be formally adopted as the goals of the region.

Once the public and stakeholders identified their values and goals, as well as the most pressing regional concerns, the RSG discussed how best to prepare an integrated strategy based on the information collected. Consideration of the values, goals and concerns revealed a series of common themes, which the RSG used as the foundation for drafting a strategic direction. (See Figure 2)



VALUES	GOALS
Wise Resource Use	• To optimize all value-added opportunities from the resource. • To minimize waste. • To encourage sustainable use. • To integrate activities among all stakeholders and governments.
Integrity and Fairness in Decision Making	• To assure that the decision-making process is timely, transparent, predictable, consistent, fair and equitable. • To ensure decisions are made and revisited in light of current science, technology and societal values.
Public Enjoyment of the Great Outdoors	• To provide opportunities for responsible enjoyment and appreciation of our natural environment.
Wilderness Lands	• To integrate management of designated protected areas within the regional landscape. • To ensure wilderness lands are maintained.
History and Historical Resources	• To ensure that historical resources are identified and respected in the decision-making process. • To ensure that our history is understood and respected in the decision-making process.
Healthy and Sustainable Economies	• To optimize economic benefits and economic stability through diversification. • To encourage conditions that maintain opportunities for resource development.
Healthy and Sustainable Communities	• To understand, respect and protect a community's culture and sense of being. • To encourage sustainable resource use and economic diversity through regional economic activities and cooperation.
Healthy and Sustainable Environment	• Conservation of biological diversity at the ecosystem, species and genetic levels within the region. • To ensure that the quality of air, water and soil are at healthy levels.
Aboriginal Way of Life	• To provide opportunities for Aboriginal communities to determine how they wish to participate in land and natural resource management. • To provide opportunities for Traditional knowledge/ Aboriginal wisdom to be incorporated into land and resource management decisions as it relates to integrated resource management. • To ensure that government, industry and other stakeholders respect Aboriginal culture, values and traditions. • To provide opportunities for continued use of land and resources by Aboriginal people.
Aboriginal Capacity Building	• To assist Aboriginal communities to build capacity to participate in integrated resource management initiatives through education, training and financial support. • To assist government, industry and other key stakeholders to build capacity about Aboriginal issues with regard to land, resources and Aboriginal culture.

Figure 2: Values and Goals.

2. *Strategic Direction for Integrated Resource Management*

The Strategic Directions in Chapter 2 Strategies for Sustainability are the RSG's recommendations to guide government, industry and communities as they work toward achieving the goals associated with four themes – Wise Use of the Land, Economic Sustainability, Conservation of Biodiversity, and Air, Water and Soil Conservation. Actions are strategic and, in many cases, address multiple issues simultaneously. Detailed recommendations, including recommended actions, are included in APPENDIX D.

An Aboriginal Task Team was responsible for drafting strategic directions for the Aboriginal Perspective section. Their recommendations are presented in Chapter 4 Aboriginal Perspective.

3. *A Cumulative Effects Management System (CEMS)*

A vision of where the region intends to go requires a system to ensure it gets there. The recommendations of the RSG are designed to enhance the existing resource management system by enabling cumulative effects assessment. The proposed Cumulative Effects Management System (Chapter 3 Cumulative Effects Management) considers the impacts of all land use and development activity on the economic, environmental and social values of the region. The proposed system ensures progress occurs, cumulative effects are addressed, and orderly economic development proceeds. The use of indicators and targets measures achievement of the strategy's goals. (See APPENDIX C)

4. *Building an Administrative Bridge*

Regional strategies are the link between provincial policy and finer-scale operational plans. In addition, they offer key direction to ensure the intent of programs and decisions of the various government departments is consistent. The NES Strategy supports much needed integration of management decisions among government departments with an interest in the region. Major policy and legislation are currently being reviewed at the provincial level and were not assessed in this study.

5. *Building a Communications Bridge*

Effective integration relies on good communication. Consultation with government departments, industry and communities, together with information from Aboriginal people, was critical to the development of the ideas in this document. Through the creation of Collaborative Partnerships (CP), the strategy promotes continued communication, cooperation and consultation.

6. *Learning into the Future*

As new information and issues emerge, the strategy will evolve. The strategy should be revisited regularly to reflect changing values, new technologies and scientific information.

The challenges facing the Northern East Slopes are not unique. Throughout Alberta and around the world, people are trying to achieve a balance between a robust economy, vibrant communities and a healthy environment. Integrated resource management is an important step towards achieving that balance. By looking at the region as a whole, considering the cumulative effects of all activities on a range of Aboriginal, social, economic and environmental values, the strategy will provide opportunities for all regional stakeholders.

Integrated management will require governments, industry and individuals to change the way they make decisions. Although adapting to new processes may be challenging, changes will offer substantial benefits to all stakeholders. The process of change will be inclusive, transparent and fair, allowing for continuous learning and improvement in the way we do business, without the need for additional layers of bureaucracy.

PROCESS

In March 1999, the provincial government released *Alberta's Commitment to Sustainable Resource and Environmental Management,* the cornerstone of Alberta's approach to environmental and natural resource management. With this statement, the province pledged its support for the continued coexistence of environmental health and economic prosperity. Building on the government's commitment, Alberta Environment, through its Integrated Resource Management (IRM) group, undertook to facilitate regional strategies. The Northern East Slopes is the first pilot strategy. Lessons learned from this work will help in the preparation of strategies for other regions.

Formed in April 2000, the Regional Steering Group (RSG) was responsible for guiding the preparation of the Northern East Slopes Strategy. The RSG includes representatives from the public at large with experience in government, industry and the community. After each meeting, the RSG distributed an update to inform interested parties of its progress.

In October 2000, the RSG began Phase 1 of the planning process (See Figure 3) by consulting with the general public and stakeholders in the NES planning area on a vision, and values and goals for sustainable resource and environmental management. Following this first round of consultations, the boundaries of the NES planning area were expanded north towards Grande Prairie and Swan Hills to include more of the forested (Green) area, as well as east to Barrhead to include more of the agricultural (White) area.

A second round of consultation in February 2002 sought help in clarifying and ranking economic, social and environmental issues. The RSG commissioned a public opinion survey to verify the priorities identified through this process. Additionally, a series of discussions took place with Aboriginal stakeholders in the region to ascertain the validity of the vision, values and goals of the strategy, and to begin to understand the Aboriginal communities interests and concerns as they relate to the region and integrated resource management. The values and goals were used to prepare the strategy. A limited amount of potential future scenario development and trade-off analysis was carried out.

Reports summarizing the results of both public consultations and discussions with Aboriginal communities are available on the government's website at:

www3.gov.ab.ca/env/regions/nes/strategy.html.

Phase 2 of the process included identification of indicators for the regional goals and an analysis of these indicators around biophysical, economic and social themes. An existing situation assessment report was prepared to summarize the results of the analysis and was used to focus priority on regional issues and to provide guidance for development of strategic directions and key actions. The analysis included modelling of cumulative effects through the use of the ALCES model (A Landscape Cumulative Effects simulator) and the examination of a number of development scenarios. Future use of the indicators and cumulative effects modelling analysis and database will occur as the strategy is implemented and monitored over time.

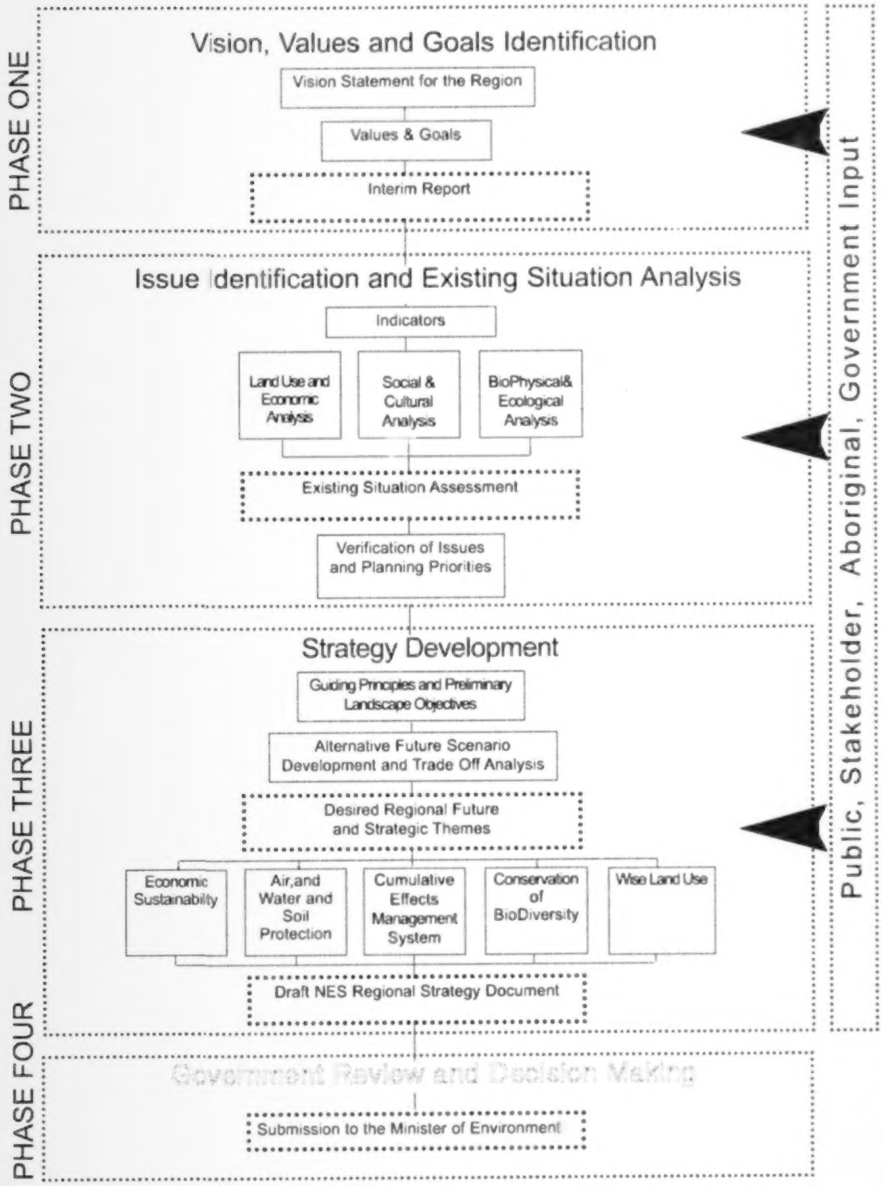

PHASE ONE
Vision, Values and Goals Identification
Vision Statement for the Region
Values & Goals
Interim Report
PHASE TWO
Issue Identification and Existing Situation Analysis
Indicators
Land Use and Economic Analysis
Social & Cultural Analysis
BioPhysical& Ecological Analysis
Existing Situation Assessment
Verification of Issues and Planning Priorities
PHASE THREE
Strategy Development
Guiding Principles and Preliminary Landscape Objectives
Alternative Future Scenario Development and Trade Off Analysis
Desired Regional Future and Strategic Themes
Economic Sustainability
Air,and Water and Soil Protection
Cumulative Effects Management System
Conservation of BioDiversity
Wise Land Use
Draft NES Regional Strategy Document
PHASE FOUR
Government Review and Decision Making
Submission to the Minister of Environment
Public, Stakeholder, Aboriginal, Government Input

Figure 3: Planning Process.

THE REGION AT A GLANCE

The Northern East Slopes is a vast, sparsely populated region stretching east from the Rocky Mountains and the BC border, through seemingly limitless forested foothills to arrive finally in a mosaic of farms, grazing areas, woodland and wetlands to the east. (See Figure 1) The Athabasca, one of the great, historic rivers of Canada, and its tributaries flow east from their source in the glaciers of the Rockies. The region includes very large protected areas, including the internationally significant Willmore Wilderness Park, as well as many smaller protected areas. Jasper National Park, while included in much of the analysis, is not formally part of the study area. The Northern East Slopes provide a substantial and diverse flow of benefits to local residents and Albertans including clean water, energy, timber, wilderness, wildlife, recreation, employment and unparalleled scenic quality. While these benefits are sustainable, we are reaching the limits of some resources and wise use and careful management is needed now more than ever. The following provides an overview of the region. More detailed analysis is available in supplemental reports.

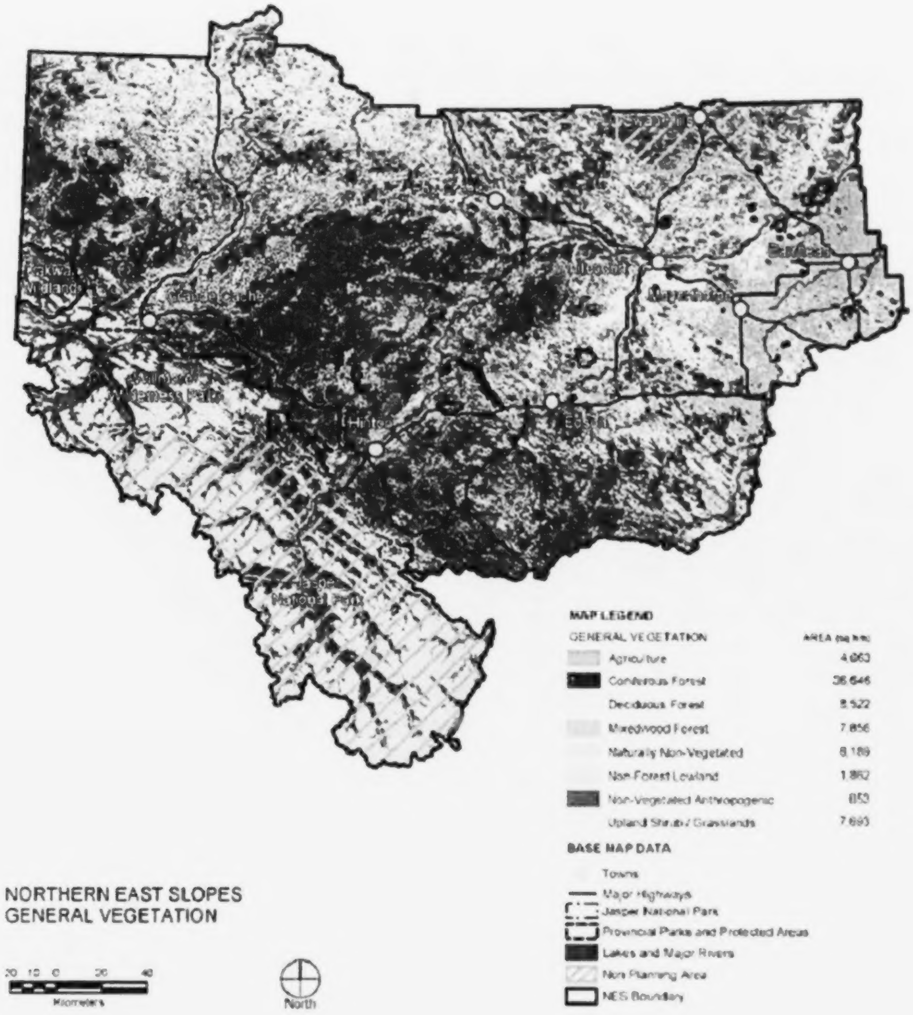
The People

The NES Strategy is designed to integrate resource management planning by considering not only the economic and environmental impacts of resource management decisions, but also the social impacts of these decisions on the long-term sustainability of communities in the region. The regional population of 71,000 people is spread throughout several communities including Edson, Hinton, Grande Cache, Fox Creek, Whitecourt, Swan Hills, Barrhead and Mayerthorpe, as well as a number of smaller settlements. Aboriginal people reside in the region on reserve lands, in cooperatives and enterprises, in towns and on public Crown lands. Aboriginal people whose landbase is outside of the region also have traditional uses of the region. Surveys show that a majority of people feel secure, healthy and enjoy a high quality of life. Communities and stakeholders express a strong interest in sustainable management of the region's resources.

The Environment

The NES region is a complex mosaic of vegetation patterns consisting of coniferous, mixedwood, and hardwood forests, and grasslands supporting a diverse wildlife population. The western portion of the study area is dominated by mountains and coniferous forests intermixed with grassland and shrubland communities. Mixedwood and pure hardwood forests become prevalent to the north and east of the Rocky Mountain influence. Large portions of the eastern area of the region have been influenced by the conversion of forest into agricultural cropland development surrounding the settled areas.

The regional environment is generally healthy. Water is clean and abundant, air quality is good, and soils are healthy. Crown lands and private lands are home to diverse plant and animal species. Large natural areas, both in the industrial forest and in protected lands, support ecological processes. Wildlife such as elk, bear, wolves and caribou continue to roam through their native habitat. Parks and protected areas support ecological objectives and serve as destinations for tourists and wilderness seekers.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Kakwa Wildland
Grande Cache
Whitecourt
Barrhead
Mayerthorpe
Willmore Wilderness Park
Hinton
Edson
Jasper National Park
MAP LEGEND
GENERAL VEGETATION
AREA (sq km)
Agriculture 4,063
Coniferous Forest 36,646
Deciduous Forest 8,522
Mixedwood Forest 7,856
Naturally Non-Vegetated 8,189
Non-Forest Lowland 1,862
Non-Vegetated Anthropogenic 853
Upland Shrub / Grasslands 7,693
BASE MAP DATA
Towns
Major Highways
Jasper National Park
Provincial Parks and Protected Areas
Lakes and Major Rivers
Non Planning Area
NES Boundary
NORTHERN EAST SLOPES
GENERAL VEGETATION
20 10 0 20 40
Kilometers
North

Figure 4: General Vegetation.

The Economy

Natural resource sectors, including oil and gas, mining and forestry form the backbone of the economy. Other economic activities include agriculture, tourism and recreation, as well as the retail and service sectors. A breakdown of the economy in the region by sector can be seen in Figure 5.

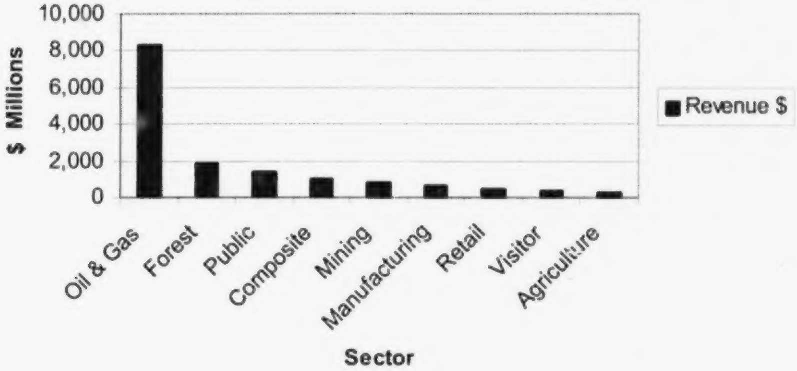


Figure 5: Economic Activity by Sector in the NES Region.

The oil and gas sector is the largest generator of revenue in the NES region with total revenue exceeding $8.2 billion. This represents approximately 54.6% of all revenue generated within the NES region, and over 27% of the total revenue generated by the oil and gas sector in Alberta. Although conventional oil reserves are beginning to decline, large reserves of natural gas remain untapped. (See Figure 8 and Figure 9) The NES region contains a total of eight Forest Management Agreement (FMA) areas and forestry remains one of the largest sectors. (See Figure 6 and Figure 7) Pulp mills, sawmills and other timber industries continue to be very important in the region with total revenues over $1.8 billion per year. The NES region's pulp and paper production represented 42.8% of total pulp and paper production in Alberta. Similarly, primary wood production in the NES region accounted for 41.8% of the Alberta total.

Coal mining has a long history in the NES region. Mining in the region has gradually evolved from underground techniques to more modern surface mines that exploit economies of scale. Coal continues to play a major role in the economic contribution to the region and the stability of local communities. Total revenue generated by mining in the NES region is an estimated $853 million.

Although agriculture is not as economically predominant as other natural resource sectors in the NES region, its use of the land shapes the landscape of the region and provides substantial employment and livelihood. The total gross farm receipts are estimated to be approximately $280 million. The net regional product (value-added) generated by the NES region's agricultural sector is estimated to be $87 million dollars in the year 1996.

While enormously important, the natural resource sectors are vulnerable to fluctuations in commodity prices. Diversification will promote long-term stability, while continuing to enable the oil and gas industry to provide significant benefits to the regional and provincial economy. There are many opportunities to expand tourism within the region. Likewise, there is significant potential for value-added processing and innovative approaches to business opportunities in forestry and agriculture.

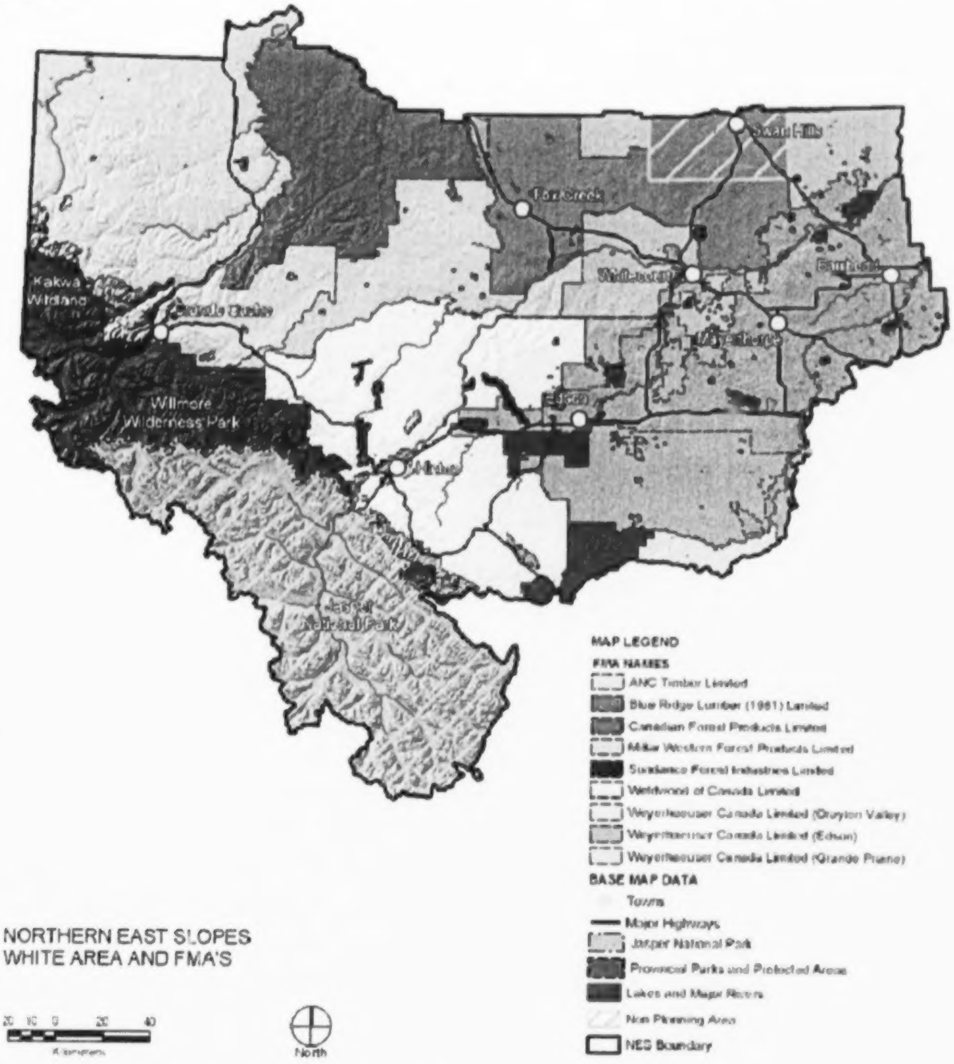

Swan Hills
Fox Creek
Whitecourt
Barrhead
Mayerthorpe
Kakwa Wildland
Grande Cache
Willmore Wilderness Park
Edson
Hinton
Jasper National Park
MAP LEGEND
FMA NAMES
ANC Timber Limited
Blue Ridge Lumber (1981) Limited
Canadian Forest Products Limited
Millar Western Forest Products Limited
Sundance Forest Industries Limited
Weldwood of Canada Limited
Weyerhaeuser Canada Limited (Drayton Valley)
Weyerhaeuser Canada Limited (Edson)
Weyerhaeuser Canada Limited (Grande Prairie)
BASE MAP DATA
Towns
Major Highways
Jasper National Park
Provincial Parks and Protected Areas
Lakes and Major Rivers
Non Planning Area
NES Boundary
NORTHERN EAST SLOPES
WHITE AREA AND FMA'S
20 10 0 20 40
Kilometers
North

Figure 6: Forest Management Agreement Areas.

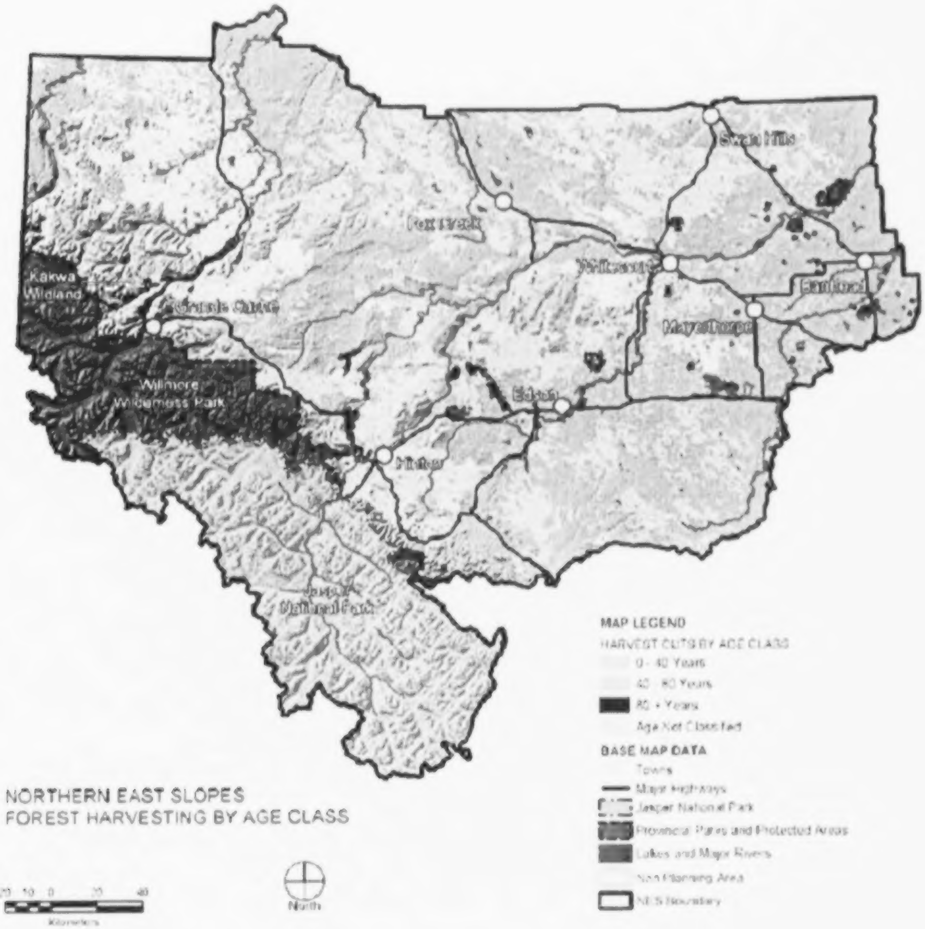

Swan Hills
Fox Creek
Whitecourt
Barrhead
Mayerthorpe
Kakwa Wildland
Grande Cache
Willmore Wilderness Park
Edson
Hinton
Jasper National Park
MAP LEGEND
HARVEST CUTS BY AGE CLASS
0 - 40 Years
40 - 80 Years
80 + Years
Age Not Classified
BASE MAP DATA
Towns
Major Highways
Jasper National Park
Provincial Parks and Protected Areas
Lakes and Major Rivers
Non Planning Area
NES Boundary
NORTHERN EAST SLOPES
FOREST HARVESTING BY AGE CLASS
20 10 0 20 40
Kilometers
North

Figure 7: Areas of Forest Harvesting.

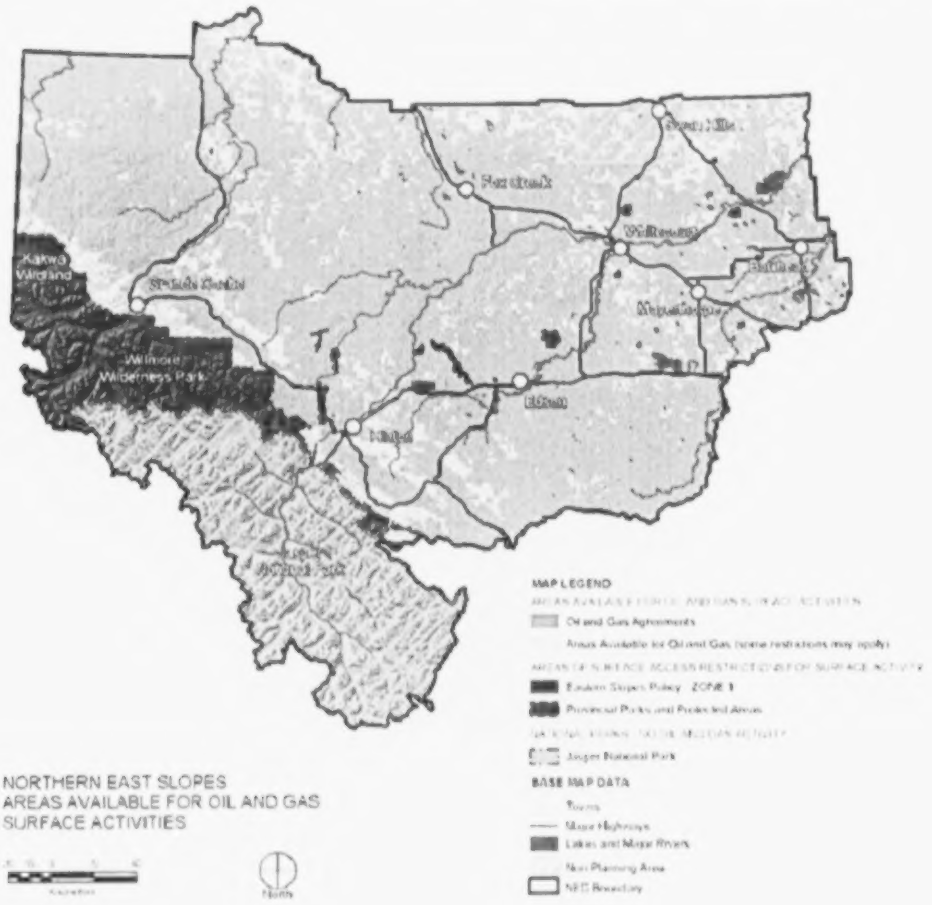

Swan Hills
Fox Creek
Whitecourt
Barrhead
Mayerthorpe
Grande Cache
Kakwa Wildland
Willmore Wilderness Park
Edson
Hinton
Jasper National Park
MAP LEGEND
AREAS AVAILABLE FOR OIL AND GAS SURFACE ACTIVITIES
Oil and Gas Agreements
Areas Available for Oil and Gas (some restrictions may apply)
AREAS OF SURFACE ACCESS RESTRICTED/NO SURFACE ACTIVITY
Eastern Slopes Policy - ZONE 1
Provincial Parks and Protected Areas
NATIONAL PARKS - NO OIL AND GAS ACTIVITY
Jasper National Park
BASE MAP DATA
Towns
Major Highways
Lakes and Major Rivers
Non Planning Area
NES Boundary
NORTHERN EAST SLOPES
AREAS AVAILABLE FOR OIL AND GAS
SURFACE ACTIVITIES
Kilometres
North

Figure 8: Areas Available for Oil and Gas Surface Activities.

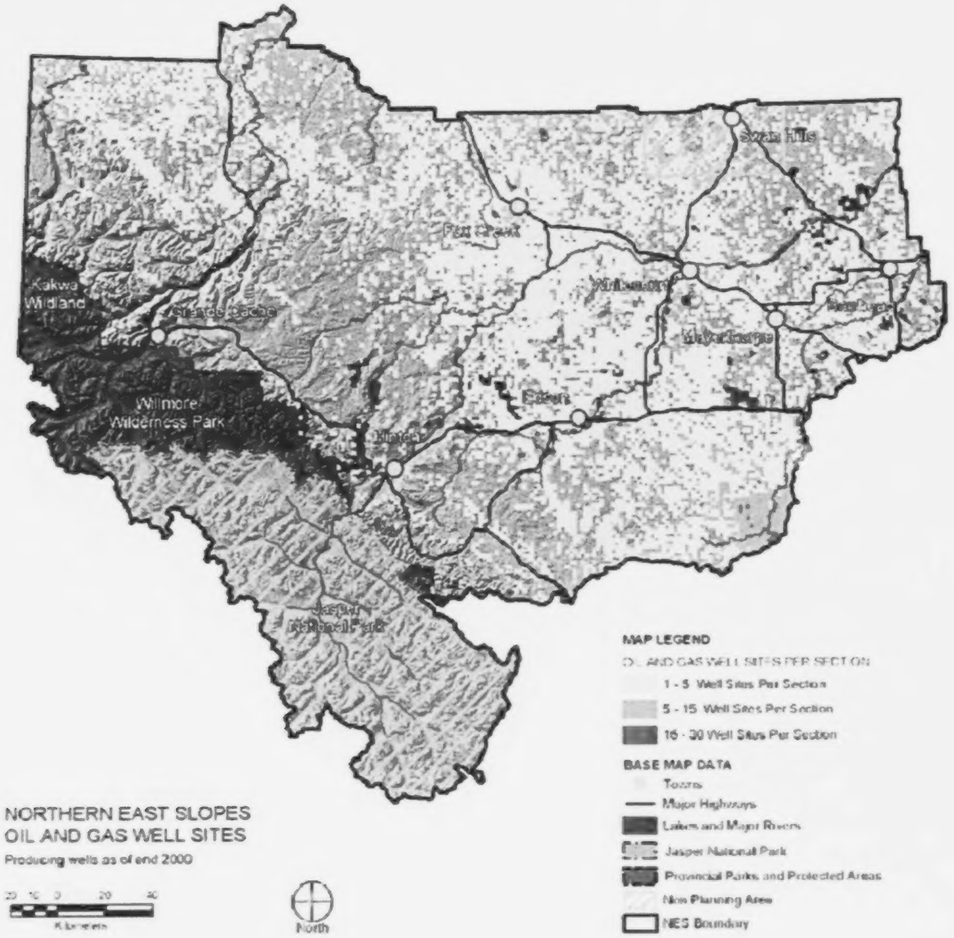

Swan Hills
Fox Creek
Whitecourt
Mayerthorpe
Kakwa Wildland
Grande Cache
Willmore Wilderness Park
Edson
Hinton
Jasper National Park
MAP LEGEND
OIL AND GAS WELL SITES PER SECTION
1 - 5 Well Sites Per Section
5 - 15 Well Sites Per Section
16 - 30 Well Sites Per Section
BASE MAP DATA
Towns
Major Highways
Lakes and Major Rivers
Jasper National Park
Provincial Parks and Protected Areas
Non Planning Area
NES Boundary
NORTHERN EAST SLOPES
OIL AND GAS WELL SITES
Producing wells as of end 2000
20 10 0 20 40
Kilometers
North

Figure 9: Oil and Gas Activity.

Living on the Land

Aboriginal use of land in the region includes hunting, fishing, trapping, and the gathering of food and medicines and cultural and spiritual activities. The region's climate, natural diversity and landscapes support a broad range of outdoor recreational pursuits – hiking, camping, fishing, hunting, rafting, photography, bird watching, rock climbing, biking and horse riding. Off-Highway Vehicle (OHV) use is increasingly popular. Commercial tourism is largely centered on the mountain national parks. Large undeveloped areas offer opportunities to experience the wilderness, both within and outside protected areas.

2

STRATEGIES FOR SUSTAINABILITY

Chapter 2 Strategies for Sustainability

The Regional Steering Group faced the difficult task of translating the values and goals described in the previous chapter into an integrated strategic direction for the Northern East Slopes. Since many of the issues and goals are interrelated, the RSG identified four strategic themes that, collectively, capture the majority of the strategic directions required to achieve the regional vision.

- **Wise Use of the Land** – broad land-use guidelines for preserving environmental, social, cultural and economic values, while at the same time supporting the region's resource development
- **Economic Sustainability** – diversifying and enhancing economic opportunities to ensure a sustainable economic future for the region
- **Conservation of Biodiversity** – ecosystem and species objectives to maintain ecological processes and biodiversity
- **Air, Water and Soil Conservation** – direction to maintain long-term sustainability of these critical natural resources

This chapter sets out principal issues and strategic directions for each of these themes.

- Details of the recommended actions, stratified by topic area, are included in Appendix D, and are appropriately linked to each strategic direction.
- A Cumulative Effects Management System that builds upon existing review, approval and processes will be key to the successful implementation of the strategy and is described in detail in Chapter 3 Cumulative Effects Management.
- A quick reference table (Table 2) is provided at the end of this chapter, linking the values and goals to the appropriate strategic directions.

THEME 1. WISE USE OF THE LAND

This theme provides broad regional direction to help ensure the conditions necessary to support sustainable development are in place. Achieving regional objectives will require management of cumulative effects and coordination of activities amongst all stakeholders. Land-use policies and objectives will consider economics, environmental impacts, land capability and societal benefits, as well as public enjoyment of the land. These objectives must also make provisions for sustaining Aboriginal cultural connections to the land and its resources.

PRINCIPAL ISSUES

- There is a need for consistent government policy and management directed towards common goals in the region.
  - Existing policies and management processes do not fully address the range and levels of activities in the region and are insufficient to guide evolving land-use trends.
  - Integration and coordination of policies is required across and between government departments.
  - Well-developed goals and integrated management priorities focused on a desired future for the regional landscape are needed. Broad-scale goals and objectives for issues such as economic development, fire management, biodiversity management and access management are required.
  - Certain sectors perceive that planning and regulatory requirements are inconsistently applied.
  - A well-defined, transparent process to guide land-use decisions is needed to ensure resulting economic, social and environmental benefits accrue to the region and the province.
- The current approval system focuses on individual projects and lacks a means to assess and manage cumulative effects at the landscape level.
- Aboriginal people in the region want to be included in decision-making processes that affect their cultural and cultural-economic uses of the land.
- Conflicts arise as demand for recreational access to Crown lands increases (e.g. motorized vs. non-motorized access).

RSG Provincial Recommendation

While the RSG adopted a regional focus, it became clear that many aspects of provincial legislation and policy were either lacking, inconsistent or in conflict. Therefore, the RSG fundamentally believes that successful implementation of any regional strategy will require a provincial review and potential reform to legislation and policy.

STRATEGIC DIRECTION

1.1 Sustainable development in the region requires that resource development continue, while protecting key societal and ecological values. Resource management processes should consider the economic opportunities, the long-term productive potential of the land, the sub-surface productivity, and the cumulative impacts of resource development on a range of societal and environmental values. (See Appendix D, Actions 1.1.6, 1.1.7, 1.2.10, 1.2.11, 1.3.4, 1.2.3, 2.1.1, 6.1.6, 6.1.7, 6.1.9, 8.6.1)

1.2 Integrate and link the management of protected areas and the surrounding contiguous landbase to improve risk management and landscape connectivity. (See Appendix D, Action 1.8.2)

1.3 Reduce the cumulative footprint of development by requiring coordination between sectors and implementing a Cumulative Effects Management System. (See Chapter 3 Cumulative Effects Management and Appendix D, Actions 1.1.4, 1.2.4, 2.1.1, 2.1.4, 2.3.7, 8.3.3, 8.6.1)

1.4 As they are integrally important to the preservation of Aboriginal culture and heritage, ensure traditional sites, including burial sites, ceremonial sites, and collection sites for traditional herbs and medicines are considered in government and industry planning and decision-making processes. (See Appendix D, Actions 5.1.4, 9.1.2, 9.1.3)

1.5 In order to maintain the visual and ecological resources of the area, manage the regional landscape to allow for resource extraction, while retaining large areas with natural characteristics and low road densities. These areas will occupy different patches of the landscape over long periods of time. Industrial and recreational activities will be coordinated to help maintain these patches. (See Appendix D, Actions 1.7.8, 3.1.10, 4.1.1)

1.6 Create sustainable opportunities for a wide range of recreational activities. Develop a Regional Recreational Access Framework that accommodates existing and projected types and levels of recreational access and activities (including OHV use). The framework will classify the entire region into the following broad categories in order to identify where restrictions apply. The following classes shall be assigned based upon recreational opportunities, as well as the potential for impact on the values of the area:

- Areas with no restrictions for off-highway vehicles;
- Areas where off-highway vehicles are restricted to designated trails;
- Areas where off-highway vehicles are prohibited; and
- Areas where seasonal restrictions apply.

These broad zones will give direction to, and provide a regional context for finer-scale access management plans. (See Appendix D, Actions 1.7.10, 1.9.1, 1.9.2, 3.1.1, 3.1.2, 3.1.3, 3.1.5, 3.1.9, 3.1.12)

1.7 Where necessary, limit the public use of industrial access to reduce impacts and safeguard other values. (See Appendix D, Actions 3.1.1, 3.1.4, 3.1.7, 3.1.11, 8.5.3)

1.8 Retain all existing legislated Wilderness Areas and Wildland Provincial Parks. (See Appendix D, Actions 1.8.3, 4.1.2, 4.1.3)

1.9 In consultation with stakeholders, develop protocols for identifying sites with historical resources issues prior to development. (See Appendix D, Actions 5.1.1, 5.1.2, 5.1.3)

THEME 2. ECONOMIC SUSTAINABILITY

The well-being and sustainability of the region's communities depends, in large measure, on employment, income and economic health. Resource extraction, agriculture and tourism are the cornerstones of the regional economy. Oil and gas extraction generates the most total revenue. While a relatively small percentage of oil and gas revenue remains in the region, royalties from this sector benefit all Albertans. Forestry is extremely important and the region contains some of the most productive forest lands in the province. Coal mining also makes significant additions to the regional economy. The Yellowhead Highway and the Canadian National Railway, both nationally important routes, pass through the region.

The following identifies opportunities for economic diversification, particularly in the areas of recreation and commercial tourism, agriculture, Aboriginal activities, value-added industries and urban expansion. This diversification will improve the resilience of the NES region's economy in the face of declining energy production, fluctuations in commodity prices and other external pressures. While encouraging diversification, the strategy also maintains opportunities for existing industry sectors to be sustainable.

PRINCIPAL ISSUES

- The region's products, services and markets are primarily resource-focused and not sufficiently diverse and balanced to ensure the stability and sustainability of local economies and communities.

- The projected long-term decline in energy production that will affect the economy and communities is of particular concern. The cyclical nature of primary resource extraction industries often results in economic volatility.

- Wildfire and Mountain Pine Beetle have the potential to seriously impact the sustainability of the forest industry.

- Current land-use (industrial, commercial, agricultural, municipal, Aboriginal, etc.) and regulatory guidelines influence the region's options for future economic growth and diversification. The region's economic health may require a re-examination of land-use policy to allow other uses.

- The lack of a dedicated landbase limits opportunities to expand the commercial tourism industry.

- Some municipalities and Aboriginal communities have expressed concern about the limited land available for residential expansion, light industrial development and other community needs.

- An Aboriginal way of life, which includes hunting, fishing, trapping and gathering, is not widely recognized as an economic base or supplement for some communities and individuals.

- Current forest industry even-flow cut control requirements do not reflect market cycles or natural disturbance regimes.

- Cumulative effects analysis has indicated that the sustainability of the forest sector could be severely impacted by natural disturbance events (insect, disease and wildfire).

STRATEGIC DIRECTION

2.1 Preserve the viability of resource extraction and development sectors given their importance to the region's economic stability. (See Appendix D, Actions 1.1.1, 1.2.1, 1.2.8, 1.2.9, 1.3.1, 1.3.3, 3.1.4, 6.1.1, 6.1.5)

2.1.1 Simplify and coordinate the regulatory environment to enable economic opportunities across a broad range of sectors. (See Chapter 3 Cumulative Effects Management and Appendix D, Actions 1.3.2, 1.4.1, 2.1.1, 2.1.2, 2.1.3)

2.1.2 Reduce the economic impacts on the forest industry from natural disturbances by aggressive fire and pest control. (See Appendix D, Actions 1.10.1, 1.10.2, 1.10.3, 1.1.9)

2.1.3 Allow forestry industries to utilize greater harvest flexibility more closely approximating the natural range of variability of natural disturbance. Harvest increases (and associated declines) may reflect economic cycles in the industry while at the same time approximating peaks in natural disturbance. (See Appendix D, Actions 1.1.8, 1.1.2, 1.1.3)

2.1.4 Ensure opportunities exist for hunting, fishing, trapping and gathering for Aboriginal communities and individuals. (See Appendix D, Action 6.1.10)

2.1.5 Identify long-term growth and associated landbase requirements for all urban municipalities. (See Appendix D, Actions 1.6.1, 1.6.2, 1.6.3, 1.6.4, 1.6.5)

2.2 Enhance the commercial tourism industry.

2.2.1 Develop and implement a comprehensive tourism strategy to increase commercial tourism opportunities in the region that addresses priority locations and products, market needs, and a regional tourism theme. (See Appendix D, Actions 1.7.1, 1.7.2, 3.1.7, 3.1.8, 3.1.10, 3.1.11, 4.1.1, 1.7.7)

2.2.2 Increase commercial tourism opportunities through the provision of a dedicated landbase and nodes for facility development. Use appropriate mitigation and management to reduce the potential for conflict between tourism and resource sectors. (See Appendix D, Actions 1.7.3, 1.7.4, 1.7.5, 1.7.6, 1.7.12, 3.2.4, 3.2.5)

2.2.3 In order to increase economic activity in the region and reduce the pressures on agricultural lands, identify a dedicated landbase for private cottages in development nodes in the Green Area. (See Appendix D, Actions 1.7.5, 1.7.6, 1.7.12)

2.2.4 Ensure that the natural qualities and wildlife of the region (including parks and protected areas) that provide tourist attraction are sustained or enhanced. Employ scenic viewshed management techniques in all areas of high tourism potential with particular emphasis around development nodes. (See Appendix D, Actions 1.7.11, 3.2.1, 3.2.2, 3.2.3, 4.1.1)

2.2.5 Give priority attention to forms of tourism that build on the natural strengths of the region and meet the evolving needs of regional, national and international markets. (See Appendix D, Actions 1.7.1, 1.7.7, 3.1.6)

2.3 Enhance other industries and strengthen economic partnerships.

2.3.1 Examine the ability of the region to support new or expanded economic activity in addition to traditional resource extraction industries. (See Appendix D, Actions 6.1.2, 6.1.4)

- Improve economic opportunities through increased agroforestry and value-added agro-industries. (See Appendix D, Actions 1.1.5, 1.1.10, 1.4.2, 1.4.4, 6.1.3)

- Increase the economic contribution of value-added industries related to forestry, mining, agriculture, co-generation, and oil and gas. (See Appendix D, Actions 1.4.3, 6.1.2, 6.1.3, 6.1.8)

2.3.2 Ensure municipal governments are consulted on all development that may have an impact upon infrastructure and servicing requirements. They should be implementation partners. (See Chapter 3 Cumulative Effects Management)

2.3.3 Develop policy to coordinate grazing opportunities and resource extraction on public land in the Green and White Areas with consideration of the full range of economic and ecological impacts. (See Appendix D, Actions 1.5.1, 1.5.2)

THEME 3. CONSERVATION OF BIODIVERSITY

The diverse landscapes and ecosystems of the NES region support a variety of species. Preserving this diversity requires integrated planning and management to maintain ecological processes. This strategy lays out a broad-scale or "coarse filter" approach to biodiversity conservation. This is supplemented by specific attention to caribou and grizzly bears, which are both sensitive to development and serve as indicators of broader ecological conditions.

This theme highlights the need for mitigation of activities, as well as the importance of coordinating industrial activities and all types of access. The landscape level objectives and recommendations provide a context for finer-scale plans such as forest management plans and other resource development activities.

The following table (Table 1) constitutes a comprehensive framework for biodiversity at the ecosystem, species and genetic levels.

Table 1: Conservation of Biological Diversity.

Conservation of Biological Diversity	**Ecosystem Diversity**	**Representative Distribution of Ecosystems**	Maintain a diversity of ecosystem types and local elements within the natural range of variability
			Maintain landscape connectivity
			Protect unique and rare landscape elements
	Species Diversity	**Wildlife Habitat**	Maintain wildlife habitat
			Maintain fish and aquatic species habitat
		Species at Risk	Protect or enhance habitats for species at risk
		Rare and Unique Vegetation	Protect rare vegetation
		Species Richness and Diversity	Maintain species richness and diversity on the landscape
	Genetic Diversity	**Reservoir of Genetic Diversity Within Species**	Ensure genetic diversity is maintained

PRINCIPAL ISSUES

- Public interest and concern about the sustainability of resources and biodiversity continues to grow, particularly in the context of industrial activity.
- The broad-scale approach to biodiversity management, that recognizes that natural disturbances have resulted in a broad range of habitats that need to be maintained on the managed landscape over time, is a currently accepted philosophy for sustainable forest management in Alberta. This includes the maintenance of landscape connectivity and representative landscape patterns of vegetation. The challenge will be to apply the concept in a regional context across multiple jurisdictions (e.g. the White and Green Areas, different Forest Management Agreement (FMA) areas, private and public lands).
- Biodiversity is an inter-jurisdictional issue requiring strategic objectives that apply to the Green and White Areas, as well as Federal and Provincial lands. Specific guidelines and management strategies may differ in the two areas because of different activities and land tenure systems.
- Baseline information on biodiversity in the region is still limited, making it difficult to develop meaningful goals and objectives.

- The introduction of exotic and modified species, particularly those that are invasive, may threaten native species.

- Caribou populations are declining regionally as well as provincially. In Alberta, Woodland Caribou are designated as "threatened." Current and projected levels of public access and industrial activity in the region may impact the effectiveness and sustainability of caribou habitat. Currently, one herd is in decline while the other two are considered stable.

- The status of grizzly bear populations in Alberta is currently under review. Over the next several decades, increasing industrial and recreational access may threaten regional grizzly bear populations.

- Aboriginal people have knowledge applicable to biodiversity conservation and desire that it be honoured as an oral tradition.

STRATEGIC DIRECTION

3.1 Conserve ecosystem diversity.

3.1.1 Maintain a diversity of ecosystem types and local elements within the natural range of variability.

- Manage landscapes and vegetation in the region based on a broad-scale "coarse filter" approach that considers natural disturbance regimes to achieve primary biodiversity objectives. Use "fine filter" species management as a supplemental strategy as necessary. (See Appendix D, Actions 1.1.3, 8.6.7, 8.6.12, 8.6.13)

- Develop strategies for biodiversity conservation for the White Area with particular emphasis on greater conservation of riparian and wetland ecosystems. (See Appendix D, Actions 1.4.5, 8.4.1, 8.4.2, 8.4.5, 8.6.4)

- Develop broad-scale landscape pattern objectives for natural sub-regions that consider natural disturbance regimes and reflect the range of natural variability. Examples include disturbance pattern and patch size, landscape connectivity, species composition and age class distribution. Develop policies and processes for implementing these objectives across multiple Forest Management Agreement areas. (See Appendix D, Actions 8.6.6, 8.6.8, 8.6.11)

- Develop a strategy for conservation and restoration of biodiversity on both private and public lands in the White Area. (See Appendix D, Action 8.6.4)

- Incorporate traditional Aboriginal ecological knowledge into natural resource management and conserving biodiversity. (See Appendix D, Action 9.1.5)

3.1.2 Maintain landscape connectivity.

- Maintain or enhance landscape connectivity by:
  - Providing large patches of natural characteristics with low road densities in key areas. Utilize aggregated forest harvesting to create and maintain these large patches over time. (See Appendix D, Actions 4.1.1, 8.6.9)
  - Ensuring broad contiguously vegetated river corridors are maintained with limited roads and facilities. (See Strategic Direction 4.2.3, and Appendix D, Action 8.6.10)

3.1.3 Protect unique and rare landscape elements.

- Manage the entire network of protected areas in an integrated manner to assist in the maintenance of biodiversity objectives. (See Appendix D, Action 1.8.2)
- In order to contribute to the conservation of regional biodiversity, develop management plans for all protected areas. (See Appendix D, Action 1.8.1)
- Continue to ensure that rare and unique landscape elements are considered in land planning. (See Appendix D, Action 8.6.2)

3.2 Conserve species diversity.

3.2.1 Maintain wildlife habitat. (See Appendix D, Action 4.1.1)

3.2.2 Maintain fish and aquatic species habitat.

- Maintain high quality aquatic habitats. (See Appendix D, Actions 8.2.1, 8.2.6, 8.5.1, 8.6.5)
- Prepare Bull trout and Artic grayling management plans for key streams and rivers. (See Appendix D, Action 8.5.4)

3.2.3 Protect or enhance habitats for species at risk.

- Develop management plans for species designated as "endangered" or "threatened" under the Alberta Wildlife Act to ensure their long-term sustainability. (See Appendix D, Actions 8.6.1, 8.6.2)
- Manage all caribou herds on a herd-by-herd basis through the maintenance of sufficient, effective habitat to maintain herd populations at approximately current levels. (See Appendix D, Actions 1.2.2, 8.7.1, 8.7.2, 8.7.3, 8.7.4, 8.7.5, 8.7.6)
- Sustain grizzly bear populations in the region. (See Appendix D, Actions 8.8.1, 8.8.2, 8.8.3, 8.8.4, 8.8.5, 8.8.6, 8.8.7)

3.2.4 Protect rare vegetation (species designated as "endangered" or "threatened" under the Alberta Wildlife Act).

- Minimize the introduction and spread of exotic vegetation species in the Green Area. (See Appendix D, Actions 8.6.14, 8.6.15)

3.2.5 Maintain species richness and diversity.

- Develop indicators and establish a regional biodiversity monitoring program. Provide support for the collection of biodiversity baseline data. Consider linkages with provincial and local programs. (See Appendix D, Action 8.6.3)

3.3 Conserve genetic diversity.

3.3.1 Ensure genetic diversity is maintained.

- To ensure that industrial and agricultural practices do not diminish the natural genetic diversity in the region, implement appropriate policies for conservation and management of forest genetic resources. (See Appendix D, Action 1.1.1)

THEME 4. AIR, WATER AND SOIL CONSERVATION

The conservation of the air, water and soil resources of the region are critical to maintaining long-term regional sustainability. This theme addresses their continued protection. Key policy direction ensures links are made between planning initiatives in the region – municipal land-use plans, forest management plans, water management plans and conservation initiatives – with particular emphasis on major water basin planning in the Athabasca and Smoky River basins.

PRINCIPAL ISSUES

- Based on available information, regional air and water quality is generally good. Local sources of emissions or effluents reduce air and water quality in certain areas. This could constrain future expansion of the industrial, agricultural and municipal sectors in those areas.
- To fully understand and predict the impact of land-use practices on air, water and soils requires additional inventories, monitoring and research.
- There are concerns about the supply of freshwater and the potential for aquifer depletion in certain areas.
- Inter-basin transfer of water (within or outside the region) is a public policy issue of significant concern in the region.
- The public and down stream water users are concerned with municipal and industrial effluents in the Athabasca River Basin.
- Lakes and permanent ponds are relatively uncommon in the region and are likely to require special attention to maintain their environmental, social and economic values.
- The public and agricultural producers are concerned about sour gas and other emissions related to oil and gas recovery, processing and flaring.
- In the context of climate change and greenhouse gas management, carbon management is an issue of increasing importance.
- Aboriginal communities in the region use these resources for spiritual and sustenance purposes.
- Some communities in the region use the springs and rivers as their sole source of household water, and when the quality or quantity of the water is compromised, the wellness of those communities is as well.

STRATEGIC DIRECTION

4.1 Maintain the quality and quantity of the region's water and air resources to ensure the protection of the aquatic environment and to support existing and future municipal, industrial, recreational, Aboriginal and agricultural use:

4.1.1 Ensure that regional air, water and soil quality receives a high priority in land-use planning and environmental impact assessment. (See Appendix D, Actions 8.1.1, 8.2.2, 8.3.1, 9.1.6)

4.1.2 Ensure that regional air quality, surface and groundwater quality meets or exceeds existing standards. (See Appendix D, Actions 8.1.1, 8.1.2, 8.2.2, 8.3.1)

4.1.3 Maintain region[illegible] air quality through recognition that polluting up to a limit is not acceptable an[illegible]t the best strategy for avoiding future problems is keeping clean areas clean. [illegible]e Appendix D, Actions 8.1.1, 8.2.2, 8.3.1)

4.1.4 Ensure that public concerns regarding air and water quality in localized areas are promptly addressed through assessment, monitoring and appropriate mitigation. (See Appendix D, Actions 8.1.1, 8.2.2)

4.1.5 Support and implement the Public Safety and Sour Gas Committee recommendations. (See Appendix D, Action 1.2.5)

4.1.6 Ensure that best practices for the protection of air, water and soil are uniformly applied by all industries in the region. (See Appendix D, Actions 8.1.1, 8.2.2)

4.1.7 Support partnerships aimed at multi-sector participation in airshed and watershed protection. (See Appendix D, Actions 8.1.1, 8.1.2, 8.2.4, 8.5.2)

4.2 Manage water resources using an integrated watershed approach, recognizing the linkages between water quality/quantity and activities and disturbances. Take direction from the Water Strategy regarding inter-basin transfers.

4.2.1 Consider the region's concerns regarding inter-basin transfers in the development of the provincial Water Strategy. (See Appendix D, Action 8.2.1)

4.2.2 Prepare River Basin Management Plans for the Smoky and Athabasca River basins. (See Appendix D, Actions 1.7.9, 8.2.1)

4.2.3 Develop River Corridor Management protocols to protect values unique to valley and riparian systems while achieving multiple values and goals including resource extraction. (See Appendix D, Action 8.6.10)

4.2.4 Inventory and assess the status of the region's wetland ecosystems to facilitate their inclusion in natural resource and land-use planning processes. (See Appendix D, Actions 8.4.3, 8.4.4)

4.2.5 Ensure use of regional surface and groundwater resources remains at sustainable levels and that water supply and quality is adequate for downstream use. Estimate current use of and future demand for surface and groundwater by conducting groundwater and hydrogeological studies in the region. Reduce industrial consumption of freshwater where appropriate. (See Appendix D, Actions 1.2.6, 1.2.7, 8.2.3, 8.2.5)

4.2.6 Assess the potential impact of climate change on water availability in the region and prepare adaptive management plans to address these impacts. (See Appendix D, Action 8.2.7)

4.3 Conserve soil resources to sustain primary productivity and minimize degradation and contamination.

4.3.1 Maintain soil fertility and minimize negative impacts of land use on the regional soil base. (See Appendix D, Actions 8.3.1, 8.3.2, 8.3.3)

4.3.2 Identify and apply best management practices for soil fertility, contamination and remediation. (See Appendix D, Actions 8.3.2, 8.3.3)

4.3.3 Design an appropriate soil-monitoring program that addresses regional soil management issues. (See Appendix D, Action 8.3.1)

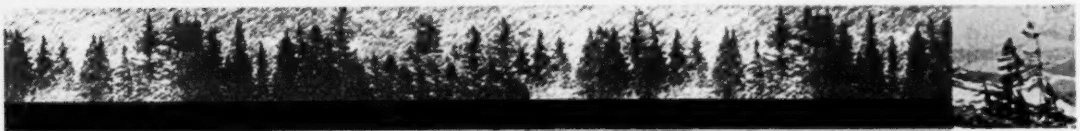
4.3.4 Continue research and policy development for Carbon Management in relation to climate change at a provincial level and consider implications to regional resource management practices. (See Appendix D, Action 8.3.4)

The following (Table 2) is a quick reference table linking the values and goals to the appropriate strategic directions.

Table 2: Values and Goals Addressed by Strategic Direction.

Wise Resource Use	
To optimize all value-added opportunities from the resource.	2.3.1
To minimize waste.	2.1.2
To encourage sustainable use.	1.1, 1.5, 4.1.3, 4.2.5
To integrate activities among all stakeholders and governments.	1.3, 2.3.2, 2.3.3, 3.1.3, 4.1.7
Integrity and Fairness in Decision Making	
To assure that the decision-making process is timely, transparent, predictable, consistent, fair and equitable.	2.3.2, 4.1.4
To ensure decisions are made and revisited in light of current science, technology and societal values.	1.3, 4.3.4
Public Enjoyment of the Great Outdoors	
To provide opportunities for responsible enjoyment and appreciation of our natural environment.	1.5, 1.6, 2.2.1, 2.2.4
Wilderness Lands	
To integrate management of designated protected areas within the regional landscape.	1.2
To ensure wilderness lands are maintained.	1.5, 1.8
History and Historical Resources	
To ensure that historical resources are identified and respected in the decision-making process.	1.9
To ensure that our history is understood and respected in the decision-making process.	1.9
Healthy and Sustainable Economy	
To optimize economic benefits and economic stability through diversification.	2.2.1, 2.2.2, 2.2.3, 2.2.5, 2.3.1,
To encourage conditions that maintain opportunities for resource development.	1.1, 1.7, 2.1, 2.1.1, 2.1.3
Healthy and Sustainable Communities	
To understand, respect and protect a community's culture and sense of being.	2.1.5, 2.3.2
To encourage sustainable resource use and economic diversity through regional economic activities and cooperation.	1.1, 2.2.1
Healthy and Sustainable Environment	
Conservation of biological diversity at the ecosystem, species and genetic levels within the region.	1.5, 3.1, 3.1.1, 3.1.2, 3.1.3, 3.2.1, 3.2.2, 3.2.3, 3.2.4, 3.2.5, 3.3.1, 4.2.3, 4.2.4
To ensure that the quality of air, water, and soil are at healthy levels.	4.1.1, 4.1.2, 4.1.5, 4.1.6, 4.2, 4.2.1, 4.2.2, 4.2.4, 4.2.5, 4.2.6, 4.3, 4.3.1, 4.3.2, 4.3.3

Aboriginal Way of Life	
To provide opportunities for Aboriginal communities to determine how they wish to participate in land and natural resource management.	5.5, 5.14
To provide opportunities for Traditional knowledge/Aboriginal wisdom to be incorporated into land and resource management decisions as it relates to integrated resource management.	3.1.1, 5.1, 5.6, 5.8, 5.10, 5.12
To ensure that government, industry and other stakeholders respect Aboriginal culture, values and traditions as they relate to the land and other natural resources.	1.4, 5.3, 5.9
To provide opportunities for continued use of land and resources by Aboriginal people.	2.1.4, 5.2, 5.13
Aboriginal Capacity Building	
To assist Aboriginal communities to build capacity to participate in integrated resource management initiatives through education, training and financial support.	5.4, 5.7, 5.8
To assist government, industry and other key stakeholders to build capacity about Aboriginal issues with regard to land, resources and Aboriginal culture.	5.5, 5.6, 5.7, 5.11



3

CUMULATIVE EFFECTS MANAGEMENT

Chapter 3 Cumulative Effects Management

> *Connections between different issues must be recognized in developing environmental policies. If this is not done, solving one issue may merely aggravate another problem... An integrated approach to environmental management provides a sound framework for developing policy and providing advice.*
>
> New Zealand Ministry for the Environment website, 2002
> www.mfe.govt.nz/issues/index.htm

The RSG investigated national and international examples of regional integrated resource management. Additionally, interviews were conducted with government and stakeholders to understand the existing regional natural resource management system. This work helped identify provincial shortcomings and barriers to implementation of regional integrated resource management, together with opportunities for improvements.

It became clear that a sustainable future required fresh thinking about the processes related to resource development and land-use planning. This is not unique. Jurisdictions around the world, grappling with similar issues, have started developing new concepts. These concepts reveal a notable consistency in integrating their approach to managing multiple activities in a regional setting.

Scientists and land managers realize it is no longer possible to assume the combined effects of disturbances will take care of themselves as long as individual disturbances are mitigated. A relatively recent concept, cumulative effects management is now understood to be an important tool for aiding decisions about land use and environmental management.

Through the consultation process and interviews, stakeholders indicated their interest in an integrated approach to resource and environmental management. This process functions more effectively than the present processes by highlighting the need for attention in two key areas:

- Better coordination and **Integration of Policy, Planning and Decision-making**, including adaptive management given the number and complexity of initiatives and approval processes in the region.

- A central role for **Cumulative Effects Assessment and Management** in the formal planning and decision-making process.

The previous chapter set forth a strategic direction that applies fresh thinking to the region's issues. This chapter describes an integrated, transparent and fair system to implement the strategic direction. Key to the success of the NES Strategy is a means of implementation and review. To achieve this, the RSG recommends the creation of a Cumulative Effects Management System (CEMS): a cooperative approach involving stakeholders, government departments, Aboriginal communities and the public, as opposed to the existing processes that lead to adversarial outcomes, rather than collaboration and consensus-building between stakeholders.

The CEMS is a combination of the current planning, approval, policy and regulatory process with the creation of an implementation process for cumulative effects that is lacking within the current structure. Additionally, the CEMS formalizes a stakeholder involvement process along with rationalizing how data is collected and stored. In essence, the system improves upon what currently exists but does not reduce, diminish or change the regulatory structure for approvals. It is a cost effective, possibly cost reductive, system that enhances the integration of resource management. The interconnected nature of cumulative effects issues in general, and the issues addressed in the strategy in particular, requires collaborative partnerships to address them effectively. Also, the strategy has been developed through such partnerships; open and transparent implementation requires similar involvement on an ongoing basis.

The recommended Cumulative Effects Management System (CEMS) represents a focus on regional goals and management, as well as the ongoing regulation and control of individual activities and approvals. The RSG believes the system will have wide reaching benefits – for stakeholders, for government, for the environment, and for the economy. This chapter, in total, represents the CEMS.

While the proposed system is by no means intended to be definitive, the concept is at the heart of what is required for the region to move towards its vision of a healthy and sustainable environment, economy and community that can be enjoyed by present and future generations. The RSG believes that better integration, modification of existing programs, and a system to assess and monitor cumulative effects will translate the region's goals from vision into reality. This is not an easy task, for no jurisdiction to date has successfully examined or implemented cumulative effects management at the scale of the NES region.

I. INTEGRATION OF POLICY, PLANNING AND DECISION MAKING

Implementation of the regional strategy requires a consistent and integrated approach to resource management. It would benefit from the incorporation of an adaptive management approach that responds to changing circumstances and knowledge.

The NES Strategy is one component of a larger system for land use and environmental management at a variety of scales – provincial, regional, sub-regional, and project-specific. The suggested planning framework ensures consistency of purpose at these different scales. Effective planning to achieve regional goals would help make the review, approval and management of individual dispositions simpler, efficient and consistent with strategy objectives.

The RSG does not advocate major changes being required within the regulatory environment or the approval process. However, the new system, in part, will require government to consider better ways to coordinate review and approval processes.

PRINCIPAL ISSUES

- A predictable, consistent planning approach throughout the region and, presumably, in other areas in the province has not been clearly articulated or implemented.
- Sector-specific local scale operational plans often do not adequately address other values and may create redundancy in stakeholder and public consultation.
- There is a lack of regional and local multi-sector integration.
- There is a lack of consistency of information and policies at different scales (provincial, regional and sub-regional).
- There is a lack of coordinated public, Aboriginal and stakeholder involvement, and due to this situation there is evidence of consultation fatigue.

- It is no longer possible to assume the combined effects of disturbances will take care of themselves as long as individual disturbances are mitigated.

- As in many other jurisdictions, most current provincial approval processes deal with development on an industry-by-industry basis.

- An integrated, transparent and fair system is needed to decide when an existing degree of land use, or proposed land use compromises other values.

- Existing processes are ineffective at providing for adaptive management.

STRATEGIC DIRECTION:

1. Ensure the provincial government continues to set standards and direction for land and resource management in Alberta (based on best available data, including cumulative effects assessment work).

2. Have the NES Strategy provide for integrated resource management at the regional scale (70,000 km^2 to 150,000 km^2). The approved strategy would serve as a framework for regional decision making and would be consistent with provincial legislation, plans and policies.

3. Where appropriate, existing regional and project-specific plans and planning processes will remain in effect.

4. Expand the current resource management system to foster an integrated, transparent and fair process that ensures the strategic regional direction is implemented and cumulative effects are addressed. The system would include:

   - Regular assessment of the regional cumulative effects of all development through the establishment of a Cumulative Effects Technical Support process (CETS)

   - A Collaborative Partnership (CP) of all stakeholders (government, industry and NGOs) to implement and monitor cumulative effects management in the region that provides:
     - Publicly transparent monitoring, auditing and reporting of regional outcomes
     - Publicly transparent monitoring and reporting of progress on strategy implementation
     - Regional objectives, developed through stakeholder partnership
     - Opportunity for stakeholder input into planning and approval processes
     - Stakeholder forum to exchange information, understand and apply adaptive responses to changing circumstances
     - Stakeholder driven strategy review and update

   - A consistent integrated planning framework including the development of Sustainable Landscape Plans (SLPs) to efficiently support the integration of multi-sector objectives at scales that are meaningful to physical planning. SLPs are only required where multiple values conflict and significant economic opportunities are driving rapid landscape change.

5. Support the need for shift in management focus from control of individual activities, approvals and dispositions to management of regional outcomes and achievement of regional goals

6. Emphasize the integration of regional cumulative effects assessment and management into the planning, approval and management processes.

7. Ensure that any local Environmental Impact Assessments (EIAs) are developed in such a manner as to take into account and be consistent with the regional strategy and take advantage of the CETS work and database.

8. Encourage government, industry and other stakeholders to understand and apply adaptive responses to new information, emerging issues and unexpected changes in the state of key indicators.

9. Ensure that government departments coordinate their review and approval processes taking into consideration multi-sector activities on the landscape and the potential cumulative impacts these activities will have on the regional strategy.

10. Ensure public accountability by performing and publishing state of the region audits based on CETS metrics, regional anthropological activity and achievement of the regional strategy.

II. CUMULATIVE EFFECTS ASSESSMENT AND MANAGEMENT

Data management and the logistics of cumulative effects assessment and management are major issues in the region. These issues must be resolved if cumulative effects assessment is to be effective and efficient.

PRINCIPAL ISSUES

- There is no consolidated information system for regional cumulative effects assessment, model development or data collection.
- Industry and government currently keep data in several formats and locations making access difficult.
- There is a lack of consistent, peer reviewed and regulator-approved methods for cumulative effects assessment and modelling.
- The current adversarial processes create substantial costs for all stakeholders and do not usually lead to consensus-based outcomes.
- Processes for assessing and managing cumulative effects at a regional scale have not been fully developed and implemented.
- Regional monitoring systems and regional indicators have yet to be developed.

STRATEGIC DIRECTION:

1. Provide an institutional home for regional cumulative effects assessment that consolidates required data and allows access to multiple users.

2. Acquire, prepare and use peer-reviewed methods to assess economic, social and environmental cumulative effects, including spatial and non-spatial models.

3. Allow for innovative methods of assessment as proponents develop new ways of utilizing data, models and technology.

4. Ensure that proponents of large projects remain responsible for assessing and mitigating effects at the local level (proponents must work within regional cumulative effects assessment and provide data to CETS).

5. Define minimum data requirements to support regional analysis and consolidate data into a single system and update as new information is collected.

6. Have industry, government and other agencies prepare common standards for contributing relevant information to the database.

7. Ensure all stakeholders share responsibility for data collection.

8. Define a regional monitoring system based on appropriate indicators for economic, social and environmental goals, whilst ensuring costs are proportionately shared between government, industry and all other stakeholders.

9. Develop a regional cumulative effects assessment system that maintains current information on regional cumulative effects and provides baseline data for project proponents for use in their EIAs, lower level plans and other activities.

HOW WILL THE CEMS WORK

The Cumulative Effects Management System (CEMS) fosters an integrated, transparent and fair process for resource management that ensures the strategic regional direction is implemented and cumulative effects are addressed. The proposed concept rests on three new initiatives being: Cumulative Effects Technical Support (CETS), Collaborative Partnerships (CP) and Sustainable Landscape Plans (SLPs). These concepts do not replace the current regulatory and policy process; they assist government employees in coordinating that work to develop a truly integrated planning, implementation and monitoring process.

The government will, however, need to develop internal processes that will allow for multiple stakeholder activity to occur on the landscape in accordance with the strategic direction. These activities will need to be vetted in such a manner that all cumulative effects within the region or sub-regional area, as may be the case, will be taken into consideration, accounted for and mitigated where necessary. The current review process is no longer satisfactory in this regard and coordination between departments will be a key area of reform.

The proposed system would facilitate implementation of the NES Strategy by providing the following services:

- Monitoring progress in achieving the strategy's goals
- Ongoing strategy development, update and improvement through adaptive management
- Integration of regional cumulative effects assessment and management into the planning, approval and management processes
- Coordinated data collation and management
- Coordination of plans for major development
- Accountability through audits and public reporting
- Ongoing Aboriginal, public and stakeholder involvement
- Education and communication
- Coordination of applied research
- Monitoring of indicators
- Improvements to intergovernmental review processes
- Excellent base for developing general policy

Most of these services would be provided through existing approval and management processes. To support the delivery of these services, the NES Strategy recommends the creation of Cumulative Effects Technical Support (CETS) and Collaborative Partnerships (CP) to advise and support existing government approval and management processes. Government regulatory and approval processes would incorporate information from these two concepts, including cumulative effects considerations and analysis of conflicting demands. (See Figure 10)

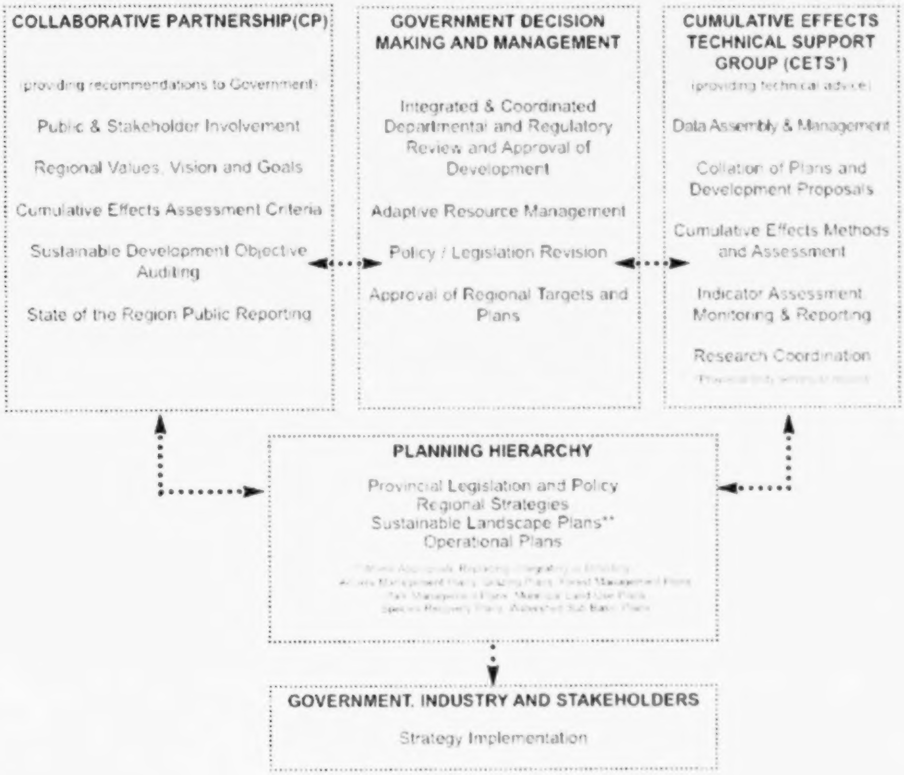

COLLABORATIVE PARTNERSHIP(CP)
(providing recommendations to Government)
Public & Stakeholder Involvement
Regional Values, Vision and Goals
Cumulative Effects Assessment Criteria
Sustainable Development Objective Auditing
State of the Region Public Reporting
GOVERNMENT DECISION MAKING AND MANAGEMENT
Integrated & Coordinated Departmental and Regulatory Review and Approval of Development
Adaptive Resource Management
Policy / Legislation Revision
Approval of Regional Targets and Plans
CUMULATIVE EFFECTS TECHNICAL SUPPORT GROUP (CETS*)
(providing technical advice)
Data Assembly & Management
Collation of Plans and Development Proposals
Cumulative Effects Methods and Assessment
Indicator Assessment Monitoring & Reporting
Research Coordination
PLANNING HIERARCHY
Provincial Legislation and Policy
Regional Strategies
Sustainable Landscape Plans**
Operational Plans
GOVERNMENT, INDUSTRY AND STAKEHOLDERS
Strategy Implementation

Figure 10: Functional Structure of the Cumulative Effects Management System.

Cumulative Effects Technical Support (CETS)

CETS would provide an institutional home for regional cumulative effects assessment by fulfilling a technical advisory role to government and all land-use proponents that is currently underdeveloped. A number of organizational options exist for CETS, including government, industry, Aboriginal and stakeholder partnerships.

The requirements for technical expertise and infrastructure suggest that it would operate most efficiently at the provincial level, providing support to all Collaborative Partnerships. It must be service oriented and able to operate with tight timelines in a multiple-client environment. Creation would come from a review of existing industry and government resources in this area with a reconciliation and amalgamation of these resources into a single, provincially effective unit funded by industry, government, First Nations and stakeholders.

> *Cumulative impacts that are felt at a regional scale can only be addressed through processes directing development at that same scale. Therefore, adequate control of cumulative impacts requires regional planning and cooperation.*
>
> Cumulative Effects of Natural Gas Development in Northeast British Columbia, 1994.

Regulatory bodies, including the EUB and NRCB, would use and contribute to the CETS data management and cumulative effects assessment to support their decision making.

Role

The CETS would provide technical support to the CP, industry and government departments involved in resource management. The CETS would provide advice on the following:

- **Cumulative Effects Assessment Indicators and Criteria.** Indicators and criteria for assessing cumulative effects would be based on indicators identified by the regional strategy, the CP, and provincial and federal regulatory agencies.

- **Development of Cumulative Effects Assessment Methods.** CETS would acquire and prepare peer-reviewed methods to assess economic, social and environmental cumulative effects, including spatial and non-spatial models. Proponents and approval bodies would enjoy a predictable and consistent approach to assessment.

- **Cumulative Effects Assessment.** CETS would regularly assess the regional cumulative effects of all development. The number and scale of proposals would determine the frequency and scope of cumulative effects assessment. Proponents of large projects would remain responsible for assessing and mitigating effects at the local level.

- **Data Collection and Management.** Existing data would be consolidated in a comprehensive system and would be updated as new information is collected. Industry, government and other agencies would prepare common standards for contributing relevant information to the database. CETS would define minimum data requirements to support regional analysis. Government, industry and NGO sectors would have access to the data, subject to data sharing agreements and proprietary requirements. Government, industry and stakeholders would be responsible for data collection.

- **Monitoring.** The group would coordinate monitoring and reporting requirements for selected indicators. Monitoring would consider all types of indicators: economic, ecological, social and cultural. (See APPENDIX C)

- **Collation of Plans and Development Proposals.** Proponents, including all levels of government would submit all major developments and plans to the CETS for inclusion in the regional database and consideration in the regional cumulative effects assessment. The group would prepare technical specifications for submissions and protocols to ensure the orderly, consistent flow of information.

- **Aboriginal Uses and Knowledge Inventory.** CETS would facilitate the collection and application of Aboriginal traditional ecological knowledge for the regional database and regional analysis.

Collaborative Partnerships (CP)

Drawn from a broad base of stakeholder and government representatives, the CP is an appointed, volunteer advisory committee, as opposed to a decision-making body. The focus of the CP is not on specific projects, but on regional cumulative effects.

As part of its Terms of Reference, the CP would monitor the effectiveness of the regional strategy's implementation and periodically update the strategy. It would issue public "State of the Region" reports and make recommendations to government on required changes in policy or management, particularly where provincial policy and legislation is acting as a barrier to the achievement of regional goals.

Membership

The public credibility of its membership is the key requirement for the CP. The committee should be balanced and represent diverse interest groups. It should consist of senior members from key government departments, industry, Aboriginal communities and stakeholder groups who would report directly to the government and the public.

Role

The committee would be responsible for the following services:

- **Monitoring Implementation.** The CP would monitor progress in implementing the strategy. Analysis of monitoring data would indicate if goals are achieved or if corrective action is required. Monitoring may lead to an audit, further research, or identification of particular issues that require attention.

- **Auditing Regional Outcomes.** The CP would audit the outcomes of integrated resource management and the achievement of sustainable development against the goals and objectives adopted by government within the region.

- **Reporting.** Ongoing accessible and transparent public reporting would include annual information on the results of monitoring and audits, and a periodic "State of the Region" report.

- **Cumulative Effects Review.** The CP would review cumulative effects reports from the Cumulative Effects Technical Support (CETS). The government *may* request CETS to perform interim cumulative effects assessments of major projects.

- **Development / Environmental Objectives.** Based on the cumulative effects assessment and other analyses, the committee would recommend environmental and development objectives to government in order to achieve economic development while protecting valued ecosystem and cultural components. These targets would form the basis for development review and approval by government.

- **Input to Planning and Approval Processes.** The CP would provide advice to industry, stakeholders, and government approval authorities, including the EUB and NRCB. The committee would report to government on any variations from expected targets. This may lead to a review of the activity, the development of mitigation measures, or the establishment of new regional targets.

- **Adaptive Management.** The CP, through its members, would encourage government, industry and other stakeholders to understand and apply adaptive responses to new information, emerging issues and unexpected changes in the state of key indicators.
- **Dialogue and Education.** Aboriginal and public involvement reflects the ongoing need to exchange information about integrated resource management plans and performance. The CP would carry out regular public consultation and communication about regional issues and planned directions relevant to the NES Strategy.
- **Strategy Development and Update.** The strategy should undergo regular reviews and a major update every 10 years to reflect changing circumstances, performance and public requirements.

Sustainable Landscape Plans (SLPs)

SLPs respond to the need for multi-sector integration at a scale that falls between regional and local. Regional strategies do not offer explicit direction for integration at this level. Local operational plans often only address a single aspect, resulting in an overwhelming number and variety of consultation programs.

Sustainable Landscape Planning offers an efficient method to integrate various objectives in a way that is meaningful for physical planning. The SLP framework simply provides a consistent approach to planning where integration between sectors and values is required. SLPs would streamline and consolidate existing processes.

SLPs would be required for areas where multiple values conflict and significant economic opportunities drive rapid landscape change. SLPs would provide general direction concerning the distribution of development and human disturbance in specific areas. SLPs would identify specific resource objectives and would ensure resource use respects sustainable economic, social and environmental limits.

As required, SLPs would consolidate and/or provide direction for the finer-scale plans of specific industries and government agencies. The RSG does not propose landscape plans for all areas in the region. Rather, SLPs would *only* be required where multiple values conflict and significant economic opportunities drive rapid landscape change. Ongoing cumulative effects assessment by CETS would help identify areas requiring SLPs. Where SLPs are not needed, government policy and the NES Strategy would guide resource specific plans.

SLPs are, in essence, the same sub-regional planning processes that are carried out at present but will now be designed in a consistent manner that meets sub-regional analysis expectations and will take advantage of CETS and all the associated data, modelling and process development. An example of a current planning process that would now fall under SLPs would be the West Central Caribou Committee. The SLP process is not intended to be a new layer in planning, but rather an amalgamation of current planning processes into a single cohesive, predictable and more effective process.

III. CONCLUSION

The Cumulative Effects Management System is a new approach to planning and approval and as such, there is a need to review and revise the current management, approval and policy processes. Figure 11 illustrates the RSG's vision of the current process with the additions as spoken to within this chapter. It cannot be overstated that the successful implementation of IRM requires government department's cooperation and dedication to working together internally and committing to IRM and the regional strategy. This will require a new way of doing business, reaching and managing hard decisions and, above all, trust: trust in the system and trust in each other.

It should also be noted that truly embracing the concept of integrated resource management will require the efforts of Aboriginal people, government, industry and all other stakeholders working in a collaborative and coordinated fashion. In essence, this is integrated resource management: a sharing of, and respect for, values, goals, objectives and strategies.

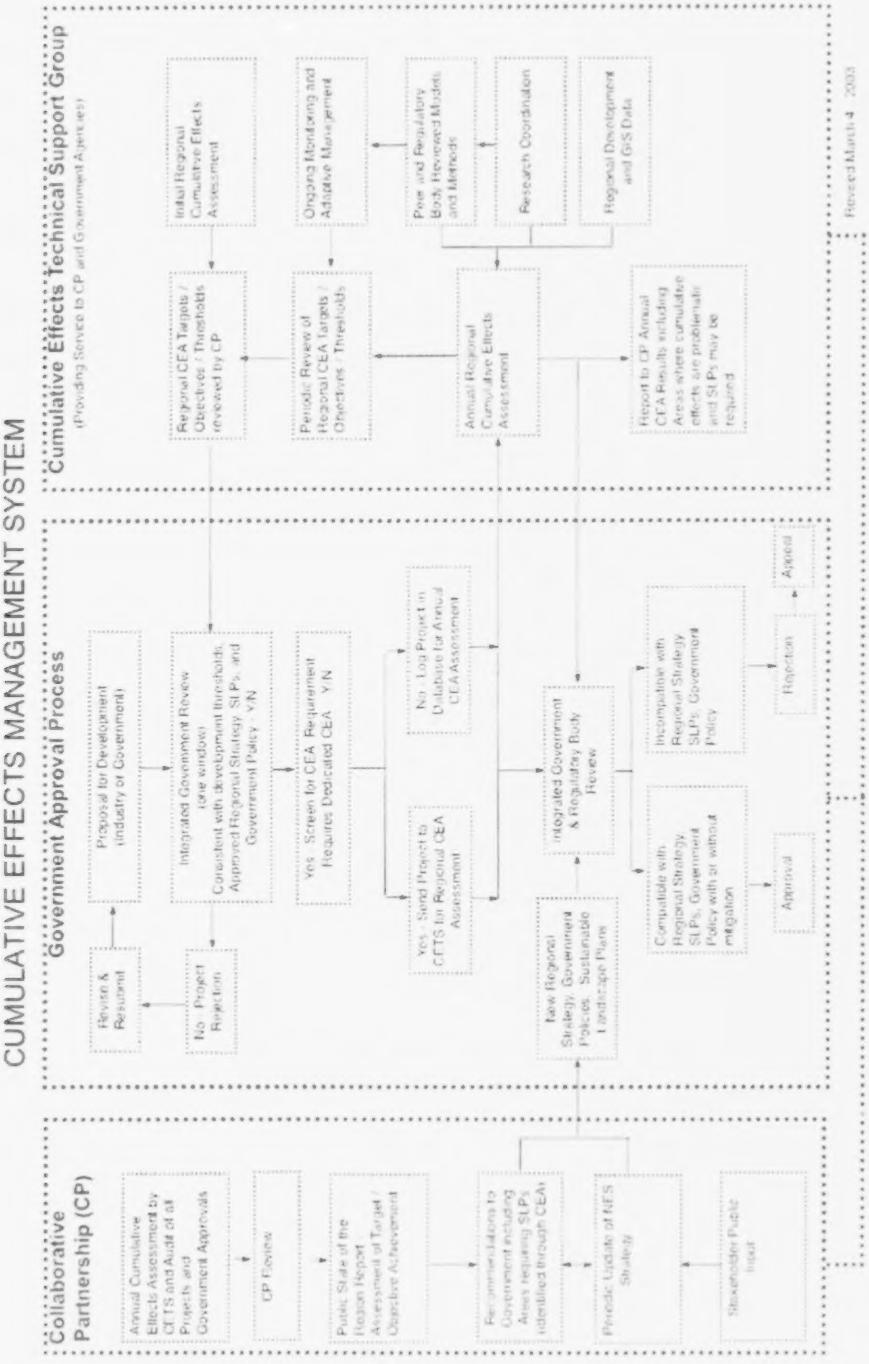

CUMULATIVE EFFECTS MANAGEMENT SYSTEM
Collaborative Partnership (CP)
Annual Cumulative Effects Assessment by CETS and Audit of all Projects and Government Approvals
CP Review
Public State of the Region Report Assessment of Target / Objective Achievement
Recommendations to Government including Areas requiring SLPs identified through CEA
Periodic Update of NES Strategy
Stakeholder Public Input
Government Approval Process
Revise & Resubmit
No - Project Rejection
Proposal for Development (Industry or Government)
Integrated Government Review (one window) Consistent with development thresholds, Approved Regional Strategy, SLPs, and Government Policy - Y/N
Yes - Screen for CEA Requirement Requires Dedicated CEA Y/N
Yes - Send Project to CETS for Regional CEA Assessment
No - Log Project in Database for Annual CEA Assessment
New Regional Strategy, Government Policies, Sustainable Landscape Plans
Integrated Government & Regulatory Body Review
Compatible with Regional Strategy, SLPs, Government Policy with or without mitigation
Incompatible with Regional Strategy, SLPs, Government Policy
Approval
Rejection
Appeal
Cumulative Effects Technical Support Group
(Providing Service to CP and Government Agencies)
Initial Regional Cumulative Effects Assessment
Ongoing Monitoring and Adaptive Management
Peer and Regulatory Body Reviewed Models and Methods
Research Coordination
Regional Development and GIS Data
Regional CEA Targets / Objectives / Thresholds reviewed by CP
Periodic Review of Regional CEA Targets / Objectives / Thresholds
Annual Regional Cumulative Effects Assessment
Report to CP Annual CEA Results including Areas where cumulative effects are problematic and SLPs may be required
Revised March 4, 2003

Figure 11: Cumulative Effects Management System.

4

ABORIGINAL PERSPECTIVE

Chapter 4 Aboriginal Perspective

The Regional Steering Group, as recommended by the Aboriginal Task Team, integrated what was heard from Aboriginal communities into the strategy, particularly the aspects of Aboriginal use of land and traditional knowledge. The contents of this chapter are a reflection of the views and comments expressed by the Aboriginal people of the region during the community information sessions held as a component of the strategy's communication process.

Additionally, in response to feedback from Aboriginal communities, the values of Aboriginal Way of Life and Aboriginal Capacity Building were created to ensure that the Aboriginal perspective influenced the development of this Strategy.

However, the incorporation of feedback from the communities was limited by the scope of the strategy and the policy and legislative parameters under which this strategy was developed. As such, this chapter identifies additional Principal Issues specific to the Aboriginal people that should receive attention at a Provincial and/or Federal level. Related Strategic Directions to be considered in implementing the strategy are also outlined, as are Recommended Actions (in APPENDIX D).

> *The concept of "resource management", given the relationship of many Native people to the natural environment, is as foreign to them as the courts in which they argued their rights to lands and "resources." The words "resource" and "management" imply a human superiority incompatible with the holistic values expressed by many traditional Native people.*
>
> Shapcott 1989:72

Five strategic themes collectively capture the feedback from the Aboriginal community; attention to these themes will improve the effectiveness of integrated resource management. However, it should be noted that no theme can be considered to be mutually exclusive of the others; all themes are interrelated and require that the chapter be interpreted in that context.

- Traditional Knowledge – utilizing the expertise and experiences of Aboriginal Elders, trappers and land users to provide information for land-use planning and management
- Land Use – Aboriginal value of the land and the need to incorporate their uses in integrated resource management
- Inclusion and Continued Participation – identifying obstacles to Aboriginal participation in strategy development and future implementation
- Commitment and Trust Relationships – awareness of grievances pertaining to rights and consultation
- Economic Sustainability – underpinning needs for employment and conflicting values that influence attention to this Strategy

Timeframes are not identified; further discussions with Aboriginal communities are needed in-order to build the relationships that would allow for mutual identification of an appropriate implementation schedule.

In addition to comments from Aboriginal communities, the goals of addressing community well-being and jurisdictional concerns, as identified in *Strengthening Relationships: The Government of Alberta's Aboriginal Policy Framework*, guided the development of this chapter.

TRADITIONAL KNOWLEDGE

Traditional ecological knowledge is the counterbalance to scientific knowledge; both should contribute to a comprehensive vision for integrated land-use management. The concept of balance is an age-old belief. All aspects of the medicine wheel must be in balance for things to be as the Creator intended; there is a rough and a smooth side to all things to maintain balance. Traditional knowledge encompasses far more than thoughts or truths held in one's consciousness. It is knowing every inch of the landscape, every smell and every sound – it is innate because Aboriginal people have lived here for generations.

The RSG has acknowledged this and has made recommendations that support the utilization of traditional knowledge as an important mechanism for understanding Aboriginal use of the land.

PRINCIPAL ISSUES

- Aboriginal knowledge is generally not documented or written and thus creates challenges to incorporating it into an Integrated Resource Management Strategy. Knowledge is traditionally shared orally through stories, teachings and experiences.

STRATEGIC DIRECTION

5.1 Support the use of Traditional Ecological Knowledge or Aboriginal wisdom in the implementation of this Strategy. (See Appendix D, Actions 2.4.3, 9.1.1, 9.1.5, 9.1.6, 9.1.7, 9.1.9, 10.1.11)

5.2 Sustain and support traditional lifestyles and sites, effectively balancing resource development with other interests of both the western and Aboriginal worlds. (See Appendix D, Actions 5.1.4, 9.1.8)

LAND USE

Many communities have identifiable sites that tie them to their heritage, including gravesites, ceremonial sites, traditional berry-picking and medicine-harvesting sites, and other spiritually significant locations. These sites are integral to Aboriginal history, culture, value systems, and the future and must be treated with respect.

PRINCIPAL ISSUES

- Considering the holistic worldview of Aboriginal people, there is concern that a regional focus is too narrow; wildlife, for example, does not recognize geo-political boundaries. (Alberta)

- With continued and growing industrial activity, natural habitats are being affected, thereby limiting and even eliminating traditional hunting, fishing and trapping areas. (Alberta)

- Non-Aboriginal interests talk about tourism, parks and recreational use, but Aboriginal concerns centre mainly around sacred use and traditional use. These pursuits do not often see eye-to-eye. (Alberta)

- Motorized recreation interferes with important traditional use areas. (Alberta/region)

- Trappers' Compensation Board is an ineffective mechanism to deal with Aboriginal trapping issues. (Alberta)
- Recovery and reclamation of previously damaged sites needs to be looked at. (Alberta/region)
- Federal/provincial/regional/municipal jurisdictions with regard to lands are in conflict (e.g.: First Nations reserves, traditional lands). (Alberta/Canada)

STRATEGIC DIRECTION

5.3 Create a better understanding of the Aboriginal traditional way of life by undertaking traditional use studies. (See Appendix D, Actions 2.4.3, 9.1.2, 9.1.3, 9.1.8)

INCLUSION AND CONTINUED PARTICIPATION

It is important to recognize that when Aboriginal people participate, they are speaking only for themselves and not as a representative of their community. This has often been frustrating for government and industry when they seek input from Aboriginal communities, because such input is only provided from an individual perspective and government and industry can never attest that they have community buy-in or support for initiatives.

> *"If you don't have the resources to fully participate in this process, then it's a faulty process."*

PRINCIPAL ISSUES

- Aboriginal people in the region want to be included in decision-making processes that affect them, such as the designation of protected areas. (Alberta/region)
- Historically, Elders and Aboriginal trappers feel that they have not been adequately involved in decision-making processes. (Alberta/region)
- Discussions regarding integrated resource management currently do not consider the political and grassroots concerns of Aboriginal communities. (Alberta/region)
- There is currently a disparity of capacity and financial resources between Aboriginal and non-Aboriginal communities in the region, as well as across the Aboriginal community. Capacity issues and the pressure of timelines do not work for Aboriginal communities and influence their ability to participate in the NES Strategy in a meaningful way. (Alberta/Canada)
- Within the Aboriginal communities, and between the Aboriginal communities, government and industry, there are many different terminologies and practices relating to use of land, protection, preservation, information sharing, etc. (Alberta/Region)
- Differences amongst communities limit the concept of a standardized approach to relationships with Aboriginal communities. (Alberta/region)

STRATEGIC DIRECTION

5.4 Ensure that Aboriginal communities have the capacity and financial resources to participate equally and effectively in the decision-making process in the region. (See Appendix D, Actions 2.2.3, 10.1.1, 10.1.2, 10.1.3, 10.1.7, 10.1.13)

5.5 Develop a model for Aboriginal participation in the implementation of the NES Strategy that respects and encompasses the diversity within and across communities. (See Appendix D, Actions 2.2.3, 10.1.4, 10.1.5, 10.1.6, 10.1.12)

5.6 Develop Aboriginal community-based environmental monitoring capacities in the region. (See Appendix D, Action 10.1.5)

5.7 Develop an education process that integrates Elder and youth concerns and works to bring understanding between Aboriginal and non-Aboriginal communities in the region. (See Appendix D, Actions 10.1.8, 10.1.9, 10.1.10)

5.8 Clearly define language and terminology in order to fully engage the Aboriginal community. (See Appendix D, Actions 10.1.7, 10.1.11)

COMMITMENT/TRUST/RELATIONSHIPS

There is a long-standing and deeply rooted lack of trust between Aboriginal communities, governments and resource developers in Canada, which impacted the development of this Strategy. The roots of this mistrust can be found in outstanding grievances regarding the understanding of the Treaties and *Natural Resource Transfer Agreement* and recognition of traditional lands.

PRINCIPAL ISSUES

- For Aboriginal communities in the region, consultation is a term that implies government-to-government discussions regarding Aboriginal and Treaty rights that are entrenched in the Constitution. There remains confusion as to the "type" of consultation that occurred pertaining to the development of this Strategy. In general, Aboriginal people do not consider themselves to have been consulted; rather, they participated in an "information-sharing" process. (Alberta)

- Jurisdictional conflicts can aggravate relationships between Aboriginal communities and federal, provincial and municipal governments resulting in Aboriginal concerns about who will monitor and maintain the NES Strategy. (AENV/Alberta/Canada)

- Aboriginal communities expect Alberta to fulfill its commitments outlined in *Strengthening Relationships: The Government of Alberta's Aboriginal Policy Framework*. In particular, the obligation to consult when regulatory and development activities may infringe Aboriginal rights. (Alberta)

- Integrated resource management does not address the rights of Aboriginal people. (Alberta/Canada)

- Current regulatory requirements under Guide 56 of the Energy and Utilities Board do not adequately address appropriate consultation with Aboriginal people. (Alberta/Canada)

- Aboriginal communities feel disrespected when they come to the table and are met with low-level bureaucrats and persons without decision-making authority. (Alberta/Canada)

STRATEGIC DIRECTION

5.9 Respect community protocols and roles of community members for involvement of Aboriginal communities in natural resource management processes. (See Appendix D, Actions 9.1.9, 10.1.13)

5.10 In coordination with Aboriginal communities, establish timelines with respect to their ability to facilitate responses to the issues. (See Appendix D, Action 10.1.14)

5.11 Work together so that Aboriginal communities, industry and government can understand each other's values and needs, and build a trusting relationship to create a non-threatening environment. (See Appendix D, Actions 9.1.4, 10.1.10, 10.1.13, 10.1.14)

5.12 Ensure consultation with Aboriginal communities takes place before development occurs. (See Appendix D, Actions 9.1.4, 10.1.10)

ECONOMIC SUSTAINABILITY

Aboriginal communities in the region struggle with the need to protect and preserve the environment and their way of life while still finding a way to participate in resource-based economic activities.

PRINCIPAL ISSUES

- Aboriginal communities use land in areas of high industrial activity. These communities are susceptible to the environmental, social and economic impacts this activity brings. (Alberta/region)

- Pressing social conditions, such as high school dropout rates and unemployment, continue to plague Aboriginal communities, limiting their ability to successfully participate in today's surging economy. (Alberta/Canada)

- There is a need for the development of new types of joint ventures and partnerships to facilitate more Aboriginal participation in the economy. (Alberta/Canada)

- Land-base allocations infringe upon traditional lands, reserve lands and trap lines. (Alberta)

- The Aboriginal workforce is being impacted by the influx of non-Albertans to the province. (Alberta)

STRATEGIC DIRECTION

5.13 Develop a fair process to address competing interests, such as use of the land for traditional activities, for recreation and for industrial activity. (See Appendix D, Action 6.1.10)

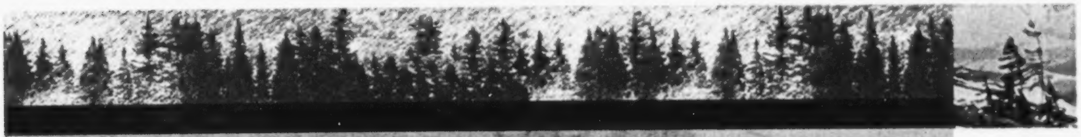
5.14 Work towards an inclusive and balanced approach to broad resource management processes and decisions that consider environmental, social and economic values, rather than a strongly influenced economic model. (See Appendix D, Actions 1.7.7, 6.1.10)

CONCLUSION

Aboriginal people in the region desire inclusion in decision-making processes that affect them and their relationship with "Mother Earth," despite a wide range of barriers that prevent them, at least in part, from fully participating in those processes. It is the view of many Aboriginal people within the NES region that the NES Strategy is the first step in eliminating those barriers and becoming participants in decision-making processes in a meaningful manner. Future resource strategies need to acknowledge and account for Aboriginal values and provide for the continuation of traditional lifestyles.

Aboriginal people's concerns derive principally from three sources: 1) traditional ecological knowledge (TEK), most notably, knowledge of ecosystem relationships and appropriate behaviors governing the use of resources; 2) past experience with industrial developments (e.g. hydro, oil and gas, and mining); and 3) a lack of specific knowledge about proposed developments and how these may affect aboriginal lands and lifestyles, especially valued ecosystem components and relationships.

Marc. G. Stevenson, Indigenous Knowledge in Environmental Assessment, 1996



5

LEARNING FROM THE PAST – LOOKING TO THE FUTURE

Chapter 5 Learning from the Past – Looking To the Future

The concept of integrated resource management (IRM) in Alberta dates back to the Eastern Rockies Forest Conservation Board in 1947 and the implementation of the Eastern Slopes Policy in 1977. Subsequent attempts at integration were intended to balance resource, social and environmental management, while at the same time addressing cumulative effects and reconciling disagreements about land-use decisions.

These processes were not always successful for many reasons. Steven Kennett of the Canadian Institute of Resource Law at the University of Calgary argues, "IRM was implemented through a commitment to general principles, regional planning and coordination mechanisms, but did not penetrate to the structural level of policies, legislation, institutional arrangements and decision making process. Second, the land-use planning process at the heart of IRM was never entrenched in law."[1]

Given the current broad-based support for integrated resource management and cumulative effects assessment in the region, the RSG believes that all stakeholders – government, industry, communities, Aboriginal communities, and the public – are prepared to work together to overcome these structural obstacles. In addition, the RSG believe the technological and scientific capacities exist to address the cumulative effects of resource and economic development.

HOW IS THE NORTHERN EAST SLOPES STRATEGY DIFFERENT?

The Regional Steering Group makes a number of recommendations designed to achieve integrated resource management in the Northern East Slopes Region.

More Stakeholder Involvement

- The RSG tried to articulate and respect the Values and Goals that were identified during the Public Consultation, and we believe they provide the necessary basis for guiding land-use decisions in the region.
- The provincial government encouraged broad-based involvement in the formulation of the NES Strategy. The ideas, concerns, and support of numerous stakeholders helped shape the final document. The RSG believes a more inclusive process is critical to the strategy's success and its recommendations support the continued active participation of stakeholders.
- The proposed Collaborative Partnership (CP) includes senior representatives of government, industry and stakeholders groups.

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[1] Steven Kennett "Integrated Resource Management in Alberta: Past, Present and Benchmarks for the Future." Canadian Institute of Resource Law. February, 2002.

Less Duplication and Better Decision Making

- The RSG's recommendations include better coordination of government policies and decision making. This streamlines the regulatory process and promotes consistency in working towards common goals.

- Government policies and regulations could be redesigned to better accommodate integrated resource planning, and the regulatory environment could be streamlined.

Emphasis on Cumulative Effects Assessment

- The RSG proposes to create an institutional home for cumulative effects assessment, overseen by a multi-stakeholder committee. The strategy envisions the Cumulative Effects Technical Support (CETS) Group as a centre of excellence for the assessment of cumulative effects across the province.

- Identifying cumulative effects on a regional scale allows stakeholders to identify where they must adapt their management techniques to address adverse effects and allows development to proceed more readily where cumulative impacts are acceptable.

- Regional assessment of cumulative effects is more cost-effective and spreads the financial responsibility more evenly among affected stakeholders.

Improved Communication

- Many of the strategy's recommendations – advisory groups, State of the Region Reports, centralized data management – serve to improve communication between the region's stakeholders.

- A transparent decision-making process promotes greater acceptance of land-use decisions by stakeholders.

- Common standards for information and a centralized database allow easier access to information essential for decision making.

Adaptive Management

- The NES Strategy will continue to evolve as input from a variety of sources, including scientific research, traditional knowledge and technical innovation, improves our understanding of the region and its resources.

NEXT STEPS

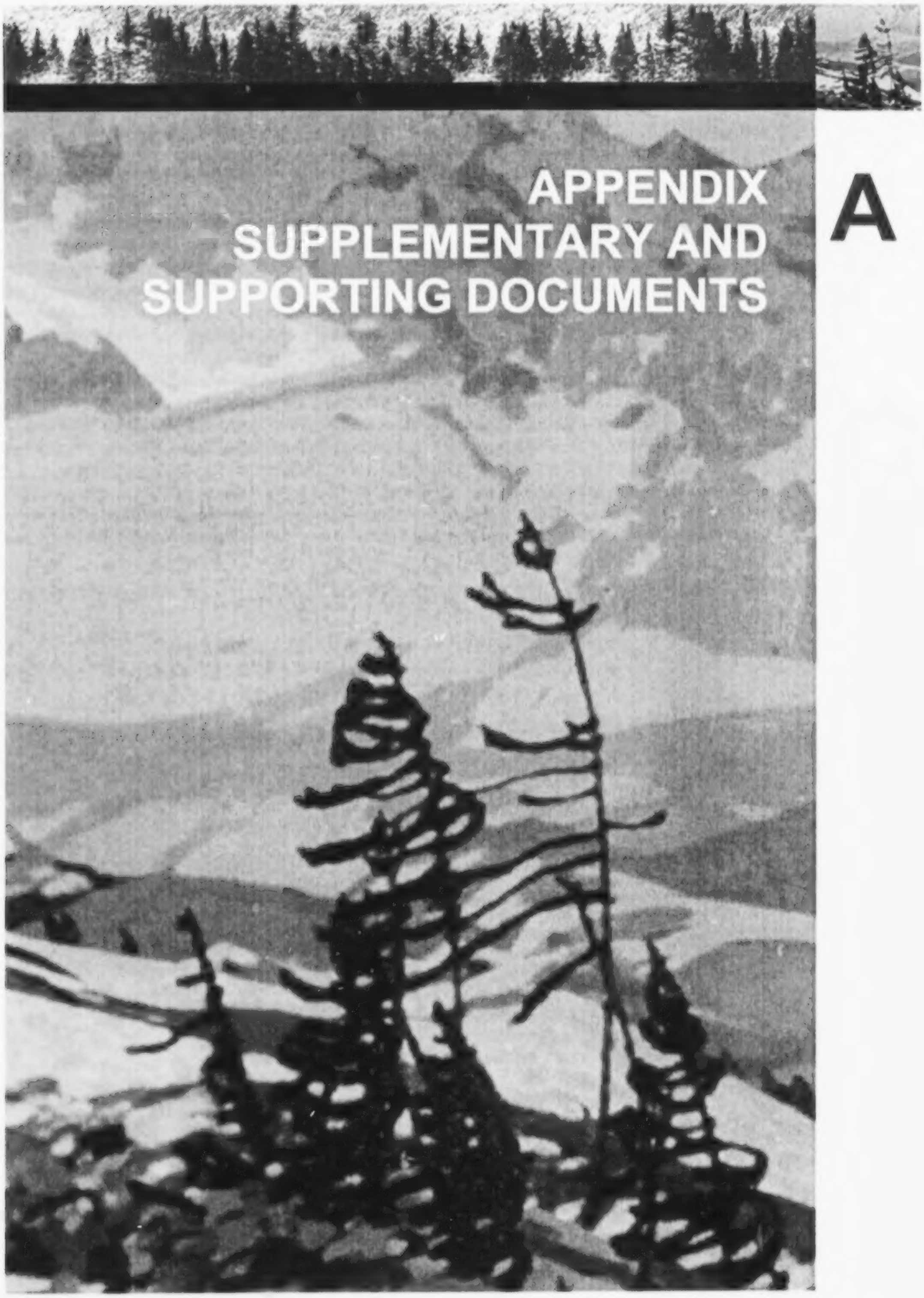
Discussions about the NES region involved the give and take that is typical of any complex undertaking. There were moments of doubt and of confidence, of controversy and conciliation. Throughout, the cooperation of government, industry and the public, and their unswerving commitment to a sustainable future for the region, inspired the RSG and continues to foster optimism for the future.

In the face of growing pressure on the region's resources, the RSG believes quick action is necessary. Consultation highlighted the belief of stakeholders that an improved, integrated approach to resource management must be adopted in the NES region – an approach that includes cumulative effects assessment; coordinated policy, planning and decision making; and strategies linked to operational plans. Founded on values and goals identified during public consultation, the recommendations in this document address these concerns.

The Northern East Slopes is not the only region of Alberta looking for ways to integrate resource management. The RSG believes other regions can benefit from the lessons learned in preparing the NES Strategy and can apply many of the recommendations to their own situation. These regions could also benefit from the CETS Group's expertise and information.

Because of strong public involvement throughout the process, the RSG is confident that the majority of stakeholders will support its recommendations and will continue to work together on implementation for the mutual benefit of the region's environment, its economy and its people.

APPENDIX A
SUPPLEMENTARY AND SUPPORTING DOCUMENTS



Supplementary and Supporting Documents

Aboriginal Information and Communication Process - Final Report. Prepared by: Four Winds & Associates Inc. March 2003

The Northern East Slopes Strategy Interim Report. Prepared by: The Regional Steering Group for the NES Strategy. January 2001.

Northern East Slopes Existing Situational Assessment. Prepared by: The Regional Steering Group for the NES Strategy. November 2002.

Northern East Slopes Integrated Resource Management Pilot Program - Regional Economic Impact Model. Prepared by: PQ Consulting Services. January 2003.

Northern East Slopes Simulation Modelling (ALCES Model). Prepared by: Biota Consulting. In preparation.

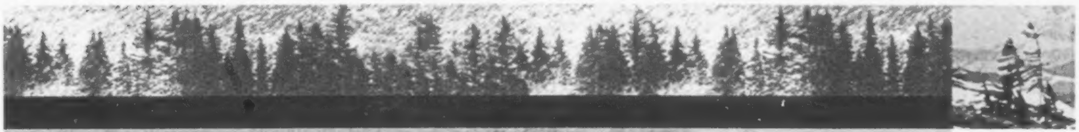
Northern East Slopes Sustainable Resource and Environmental Management Strategy Summary Analysis: Current Economic, Social and Environmental Conditions in the NES Region. Prepared by: Olson+Olson Planning and Design Consultants Inc. and The Abells Group Inc. In preparation.

Reference Document for NES Natural Resource Management Strategy. Prepared by KBM Forestry Consultants Inc. July 2002.

The Regional Natural Resource Management System For the NES Strategy. Prepared by: Page Management Counsel Ltd. and KBM Forestry Consultants Inc. September 2002.

Stakeholder Consultations February 2002 Final Report. Prepared by: The Abells Group Inc. April 2002.

Stakeholder Consultations March 24 – April 23, 2003 Final Report. Prepared by: The Abells Group Inc. April 2003.



APPENDIX B
GLOSSARY OF TERMS

Glossary of Terms used in the NES Strategy

Adaptive Management
A systematic process for continually improving management policies and practices by learning from the outcomes of operational programs. Adaptive management recognizes scientific uncertainty while accepting the need to proceed on the basis of the 'best *available* scientific knowledge.' An adaptive management approach has the following general steps:

1. Acknowledgement of uncertainty about what policy or practice is "best" for the particular management issue;
2. Thoughtful selection of the policies or practices to be applied (assessment and design);
3. Careful implementation of a plan of action designed to reveal the critical knowledge that is currently lacking;
4. Monitoring of key response indicators;
5. Analysis of the management outcomes in consideration of the original objectives; and,
6. Incorporation of the results into future decisions.

Agroforestry
"A land-use system in which woody perennials (trees and shrubs) are deliberately used on the same land management unit as agricultural crops (woody or not), animals or both, either in some form of spatial arrangement or temporal sequence. In agroforestry systems, there are both ecological and economic interactions between the different components." (World Agroforestry Centre, 2003)

Alien Species, Exotic Species
A species that was not originally found in a given area, but is now found there as a direct or indirect consequence of human activity.

Backcountry
Areas not accessible by regular on-road vehicles. Within parks, backcountry areas are usually kept in a pristine state and may offer minimal facilities such as hiking trails, primitive campsites, shelters and portages.

Biological Diversity (Biodiversity)
The variability among living organisms and the ecological complexes of which they are a part. It includes variability within species, between species and diversity of ecosystems.

Buffer Zone
A part of the land that serves to alleviate the adverse effects of the use of one area upon another.

Coarse Filter Approach
The coarse filter approach, or ecosystem approach, to managing biodiversity focuses on managing ecosystems and their natural processes, such as natural disturbances. The expectation is that the needs and functional capacity of most organisms and processes are fulfilled by managing habitats at the landscape level. This *umbrella* style approach is often called coarse filter management. For example, by managing the extent and distribution of a particular age class of forest in a watershed, numerous smaller habitats, communities and associated life forms and processes also are maintained.

Consensus (-based decisions)
A general agreement between all participants on the package of provisions that addresses the entire range of issues and interests. The participants may not all agree with all aspects of the agreement, but do not disagree enough to oppose the overall package.

Conservation
The implementation of measures for the rational use, maintenance and rehabilitation or restoration of natural resources.

Critical Habitat
A habitat that is essential to the survival of a species. Critical habitats may include, but are not limited to, breeding grounds, areas that provide year-round support for a large portion of the entire population of a particular species, winter feeding grounds, feeding stations used year-round or during periods of migration, and areas used by many species for at least part of the year.

Cumulative Effects
Changes to the environment caused by the sum of one activity in combination with other past, present, and potential future activities or events.

Ecosystem
The interaction of living organisms (plants, animals, micro-organisms) and their non-living environment as an ecological unit.

Ecosystem Approach
The design of policies, programs and operations in consideration of the unique and fundamental characteristics of individual ecosystems and in recognition of the interdependence of social, economic and environmental systems.

Ecosystem-Based Management
The management of human activities so that ecosystems, their structure, function and composition, and the physical, chemical and biological processes that shaped them, continue on appropriate temporal and spatial scales. Ecosystem-based management aims to integrate parks and protected areas into their surrounding landscapes so that they do not function as isolated habitat islands. Ecosystem-based management accounts for the range of complex interactions that occur on different temporal and spatial scales, and sustainably incorporates a range of human values into the protection and use of the landscape.

Enhanced Forest Management
Enhanced Forest Management includes a variety of techniques to manage forests for higher production and for sustainability. Examples of forest management systems with high inputs include genetic improvement, site preparation, fertilization, pest impact reduction and density management for enhanced fibre production. Complementary practices are under development to ensure that these systems are ecologically and socially sustainable.

Environmental Assessment
A comprehensive and systematic process designed to identify, analyze and evaluate the environmental effects of proposed projects.

Environmental Management System
A set of management processes and procedures that allows an organization to analyze and reduce the environmental impact of its activities.

Fine Filter Approach
The fine filter, or species-specific approach to biodiversity management focuses on determining the critical needs for individual species, and then applying management practices to meet these needs. This approach is necessary where coarse filter, ecosystem level approaches do not meet the needs of a particular species or a unique vegetation community. This is especially true for species of concern (rare, threatened or endangered, or regionally important) that may require special efforts or practices to protect or maintain their habitats.

Goal
A broad, general statement that describes a desired state or condition related to one or more values.

Habitat
The particular environment or place where an organism or species tends to live.

Habitat Fragmentation
The process of dividing a contiguous habitat into non-contiguous, smaller sub-units.

Indicator
A measurable variable used to report progress toward the achievement of a goal.

Integrated Landscape Management (ILM)
The Alberta Chamber of Resources champions this concept as a means to achieve sustainable land use, and defines it as "Resource use if coordinated in such a manner as to create the smallest and softest human footprint on the landbase while creating economic efficiencies and cost savings to industry partners. It is based on the premise that activities are interrelated and recognizes that to maintain functioning ecosystems, user coordination on a landscape level is required."

Integrated Resource Management (IRM)
Integrated Resource Management (IRM) can be defined as a way of using and managing the environment and natural resources with the aim of achieving sustainable development. Using an IRM approach means considering environmental, social and economic issues, while finding ways for all uses to co-exist with less conflict. How we manage or use one resource affects the management or use of other resources in an area. Managing each use or resource by itself is less effective then managing all of them in an integrated way. IRM is based on: cooperation, communication, coordination, consideration of all values, and involvement of those potentially affected before action.

Mitigation
The elimination, reduction or control of the adverse environmental effects of a project, use or activity.

Native Species
Organisms that occur naturally in a particular area instead of being introduced, directly or indirectly, by human activity.

Natural Area
A place where human actions have minimally changed the biotic communities and processes that occur there.

Natural Processes
Ecological processes that support life, such as solar energy, climate processes, geologic and geomorphologic processes, water cycles, fire cycles, wildlife population dynamics, and so on.

Non-Renewable Resources
Natural resources that are in fixed supply such as minerals, oil and coal.

Point Source
A stationary location or fixed facility from which pollutants are discharged; any single identifiable source of pollution (e.g. a pipe, ditch, ship, ore pit, factory smokestack).

Preservation
All actions taken to retard deterioration of, or to prevent damage to a natural or a cultural resource. Preservation encompasses conservation activities that consolidate and maintain the existing form, material and integrity of a resource. Preservation includes short-term protective measures as well as long-term actions.

Protection
With respect to ecosystems, protection means regulatory, resource management and public education programs aimed at ensuring ecosystems are maintained in as natural a state as possible. "Protection" generally refers to activities within a park or other protected area, while "sustainability" refers to broader landscape activities that extend beyond park boundaries.

Protected Area
A legally established land or water area under either public or private ownership that is regulated and managed to achieve specific conservation objectives.

Renewable Resources
Natural resources that are naturally replenished such as trees, biomass, fresh water and fish.

Restoration
The process of restoring an area, a natural resource or an ecosystem to a specified state or condition; accomplished passively through natural processes or actively by human manipulation.

Stakeholders
Stakeholders are those individuals, representatives of a group or groups who have an interest in, or concern in something.

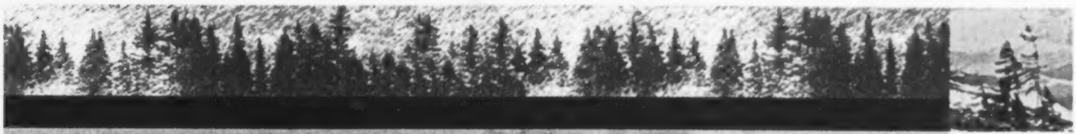
Sustainability
Sustainability is about living and working in ways that meet and balance existing environmental, economic and social needs without compromising the well-being of future generations. The transition to sustainable development benefits today's society and builds a more secure future for our children.

Sustainable Development
The United Nations World Commission on Environment and Development (the Brundtland Commission) defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

Value
A principle, standard or quality considered worthwhile or desirable.

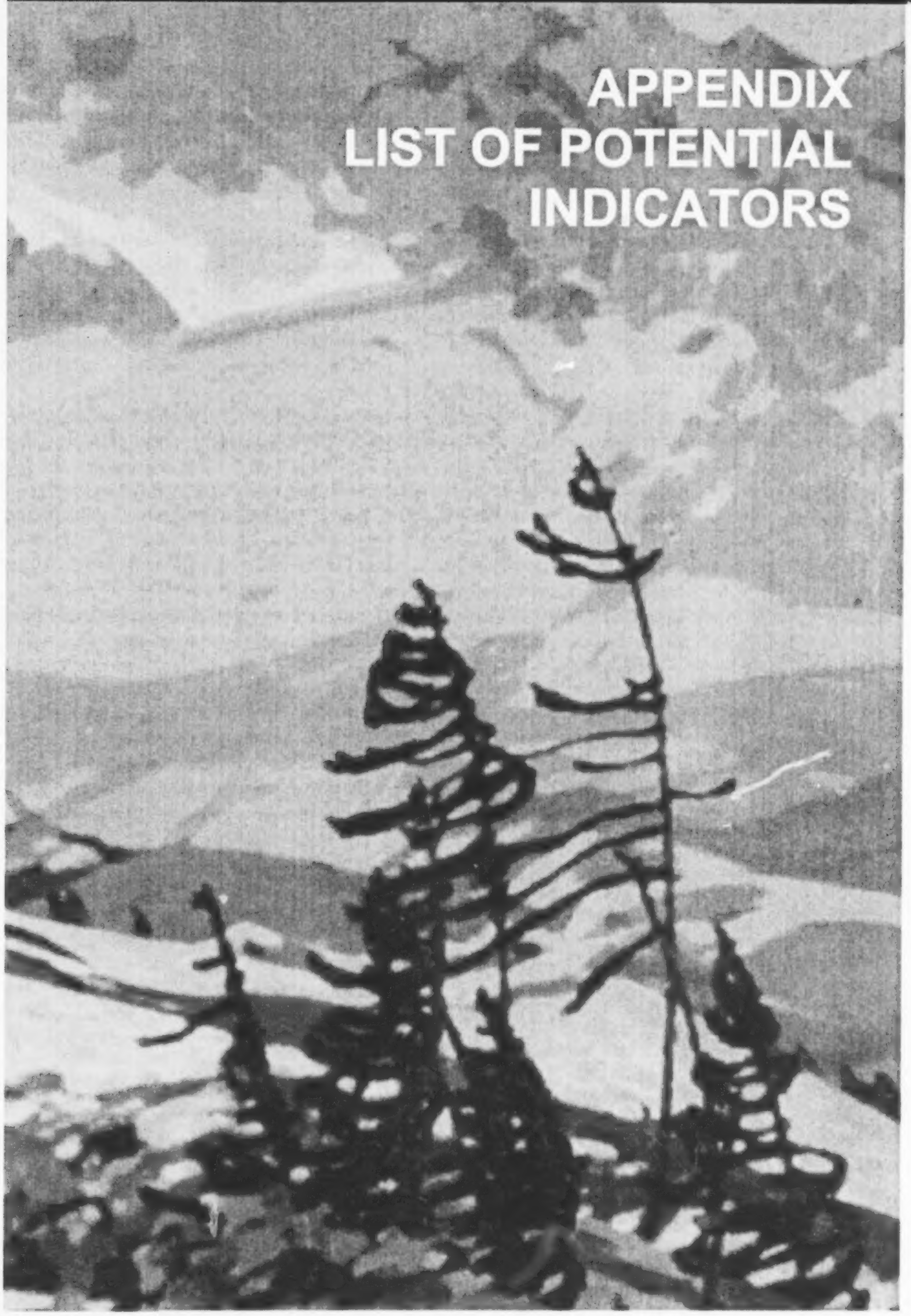
Wilderness
An enduring natural area of sufficient size to protect pristine ecosystems that may serve physical and spiritual well-being. It is an area where little or no persistent evidence of human intrusion is permitted so that ecosystems may continue to evolve. *(Parks Canada: Panel on the Ecological Integrity of Canada's National Parks – from National Wilderness Colloquium, 1988*).

Wildlife Corridor
A strip of land through which wild animals can move safely from one area to another.



APPENDIX C

LIST OF POTENTIAL INDICATORS



List of Indicators used in the NES Strategy

NOTE: The following indicators of protection and achievement of regional values and goals should be considered for long-term monitoring by resource managers

Table 3: List of Indicators used in the NES Strategy.

VALUE, GOAL, INDICATOR	Units	Area of Analysis in Addition to Region
VALUE: Wise Resource Use		
GOAL: To optimize all value-added opportunities from the resource.		
Indicators:		
Number of value-added firms (including # of employees)	# by size	
GOAL: To minimize waste.		
Indicators:		
Compliance with Forest Utilization Standards	# of infractions	
Landfill waste production	tonnes/yr.	
Number of recycling programs and facilities	#	
Land removed from production	km^2	
Wood salvaged following industrial disturbance (% of total production)	%/m^3	
Liquid waste production (sewage, sludge)		
Flaring/venting (absolute volumes of raw gas equivalent)		
Plant utilization (throughput divided by licensed capacity)		
Percent of gas conserved (total gas flared or vented divided by total inlet raw gas)		
Fuel gas usage		
Spills (volumes of hydrocarbon volume/frequency)	m^3/# per yr.	
Potable groundwater use in industrial operations	m^3	
Seismic lines reclaimed (# of hectares), land returned to inventory		
Well sites reclaimed, land returned to inventory	ha	
Well site reclamation certificates issued	#/yr.	
Wells abandoned	#/yr.	
Number of abandoned facilities	#/type/yr.	
Sulphur recovered or re-injected	% produced	
Total of non-satisfactorily reforested cut blocks	ha	
GOAL: To encourage sustainable use.		
GOAL: To integrate activities among all stakeholders and governments.		
Indicators:		
Number, type and area covered by integrated planning and approval processes (strategic and operational levels)	#/type	
Range management plans		

Table 3: List of Indicators used in the NES Strategy.

VALUE, GOAL, INDICATOR	Units	Area of Analysis in Addition to Region
Integrated land-use plans		
Access management plans		
Economic development plans		
Memoranda of understanding (MOUs)		
Other guidelines, codes of practice		
Stakeholder Involvement in Sustainability Programs/Initiatives	#	
VALUE: Integrity and Fairness in Decision Making		
GOAL: To assure that decision-making process is timely, transparent, predictable, consistent, fair and equitable.		
GOAL: To ensure decisions are made and revisited in light of current science, technology and societal values.		
Indicators:		
Public consultation (# of people, type of consultation)	# by type	
Degree of harmonization of legislation, regulations and policies		
Government investment in research and development in the region	$	
Length of approval processes	weeks	
Turn around time on standard applications for new surface dispositions	weeks	
Number of appeals	#	
Cost of application process	% of project $	
Number of hearings/violations/appeals etc.		
VALUE: Public Enjoyment of the Great Outdoors		
GOAL: To provide opportunities for responsible enjoyment and appreciation of our natural environment.		
Indicators:		
Number of tourists	#	
Tourism expenditures	$	
Number and type of recreational activities	#/type	
Number of recreational users on trails/trail class	#	
Educational/interpretive opportunities available	type	
Area by visual quality class	km^2	
Conflicts between users (number and type)	# and types	
Control on Off-Highway Vehicle (OHV) access (km of controlled access vs. km of uncontrolled access)	km/km (%)	
Tenure rights relinquished for public benefit (area)	ha	

Table 3: List of Indicators used in the NES Strategy.

VALUE, GOAL, INDICATOR	Units	Area of Analysis in Addition to Region
VALUE: Wilderness Lands		
GOAL: To integrate management of designated protected areas within the regional landscape.		
GOAL: To ensure wilderness lands are maintained.		
Indicators:		
Lands protected by legislation in km^2	km^2	Nat. Sub-Region
Lands protected by policy in km^2	km^2	Nat. Sub-Region
Natural patch-size distribution	km^2 per size class	Nat. Sub-Region
VALUE: History and Historical Resources		
GOAL: To ensure that historical resources are identified and respected in the decision-making process.		
GOAL: To ensure that our history is understood and respected in the decision-making process.		
Indicators:		
Area where heritage resources have been identified, classified, and assessed	km^2	
Proportion of area covered by traditional land-use studies	%	
Traditional land-use studies undertaken	#	
Proportion of plans and approvals with historical consideration/mitigation	%	
Aboriginal participation rates in heritage conservation programs and initiatives	#	
Number of sites identified in the course of industry operations	#	
Proportion of historical resources flagged in P&NG notices	%	
VALUE: Healthy and Sustainable Economy		
GOAL: To optimize economic benefits and economic stability through diversification.		
Indicators:		
Net Regional Product	#	
Sector % of total net regional product	$, %	
Employment by sector	persons	Community
Diversity index	$	Community
Royalties (by sector)	$	
Average weekly wage per sector	$	
GOAL: To encourage conditions that maintain opportunities for resource development.		
Indicators:		
AAC wood production (hardwood, softwood) including regenerative success	m^3/yr.	NSR, FMAs
Regional natural disturbance factor	% AAC	Nat. Sub-Region
Aggregate (sand and gravel) production	m^3/yr.	
Natural gas production (decline analysis)	m^3/yr.	
Crude oil production (decline analysis)	barrels/yr.	

Table 3: List of Indicators used in the NES Strategy.

VALUE, GOAL, INDICATOR	Units	Area of Analysis in Addition to Region
Land sales	$, $/ha, ha	
Number of drilling licenses issued	#	
NEB production forecasts for Canada		
Active operated wells	#	
Inactive operated wells	#	
Active operated facilities	#	
Inactive operated facilities	#	
Gas production from area (royalties paid)	$	
Coal production	tonnes/yr.	
Non-energy mineral reserve potential		
Forage/grazing production	AUMs	White Area
Change in agricultural landbase	km^2	White Area
Area accessible to development, by sector	km^2	Nat. Sub-Region
Average costs to access resource	$/m^3	
VALUE: Healthy and Sustainable Communities		
GOAL: To understand, respect and protect a community's culture and sense of being.		
Indicators:		
Human population		
Size	#	
Age distribution	#/class	
Human capital		
Education attainment	mean level	
Lifelong learning (measured by # of credit hours tracked by Alberta Learning)	# credit hrs.	
Income		
Median household income	$	Community
Income distribution		Community
Personal Security Index (Canadian Council on Social Development)	Index	Community
Economic security in the broad sense of job and financial security		
Disposable Income		
Aggregate poverty gap per number of poor		
Long-term unemployment rate		
Employment insurance coverage		
Social assistance level		
Debt level		
Health security in the sense of protection against threats of disease and injury		
Potential Years of Life Lost (PYLL)		
Work injuries		
Traffic injuries		
Physical safety in the sense of feeling safe from violent crime and theft		

Table 3: List of Indicators used in the NES Strategy.

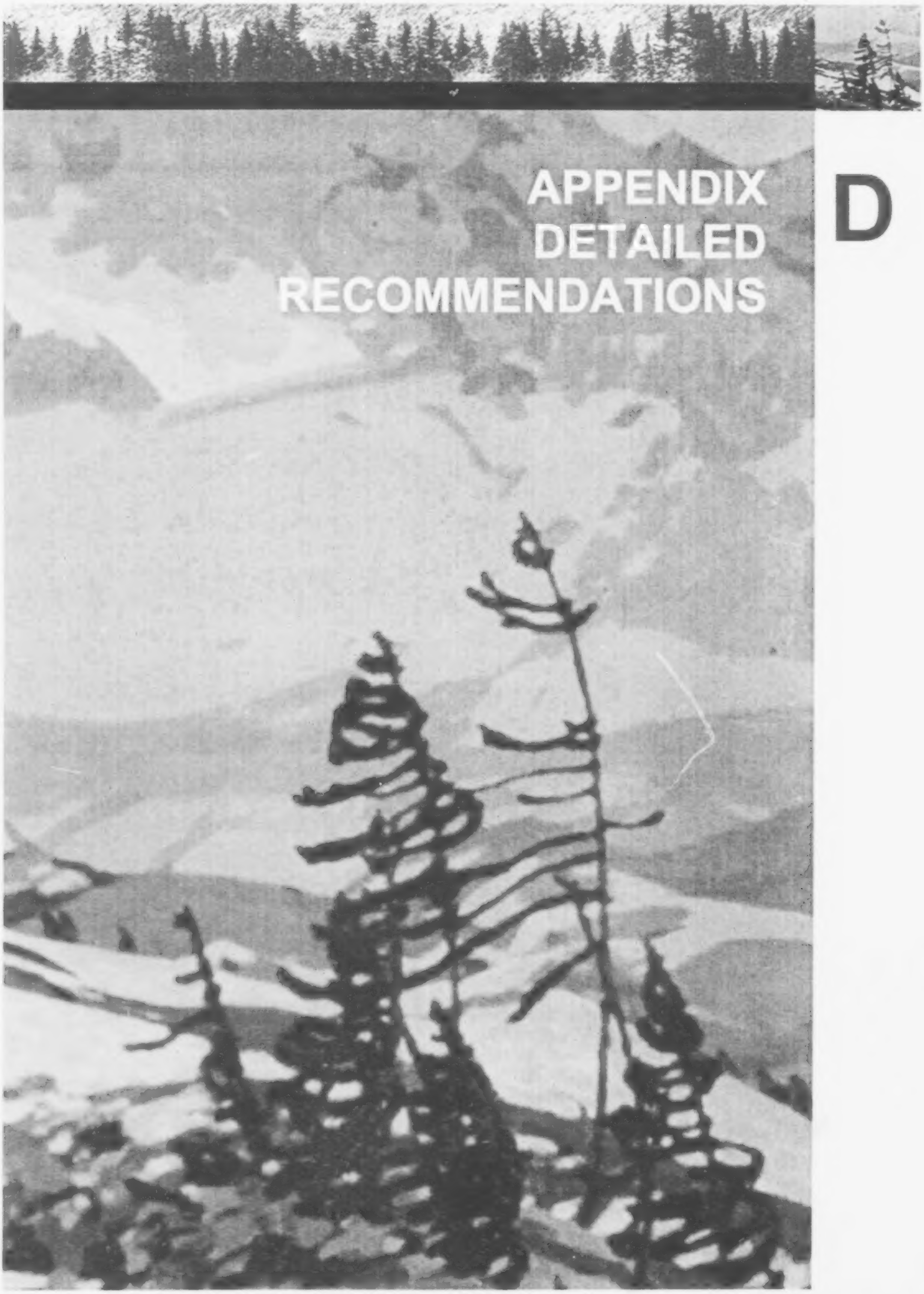
VALUE, GOAL, INDICATOR	Units	Area of Analysis in Addition to Region
Violent crime rate		
Property crime rate		
Housing		
% renting vs. % owning (municipal census)	ratio	Community
Average value of dwelling	$	Community
Availability	vacancy rate	Community
Community participation/time use		
Volunteerism		Community
Cost of public infrastructure and services	$	Community
Activities addressing risk management		
Number of fire smart initiatives, sour gas safety plans	# by type	Community
Increase in urban footprint	ha/yr.	Community
GOAL: ***To encourage sustainable resource use and economic diversity through regional economic activities and cooperation.***		
Indicators:		
Number of Aboriginal cooperation agreements between industries and aboriginal communities	# by type	
Number and type of inter-governmental economic development initiatives	# by type	
VALUE: Healthy and Sustainable Environment		
GOAL: ***Conservation of biological diversity at the ecosystem, species and genetic levels.***		
Indicators:		
Area land cover type	ha/proportion	Nat. Sub-Region
Area of forest by age class and generalized type (Coniferous, Deciduous, Mixedwood)	ha/proportion	Nat. Sub-Region
Species of Interest		
Caribou		
Caribou habitat supply (by herd)	km^2	Caribou Mgmt. Area
Caribou population estimate by herd	# of caribou	Caribou Mgmt. Area
Grizzly		
Grizzly bear habitat supply	km^2	Green Area
Grizzly mortality	#/yr.	Green Area
Grizzly population estimate or trend	# of bears	Green Area
Ungulates		
Area by ungulate thermal cover	km^2	White Area
Aquatic habitats		
Fish distribution/relative abundance (key monitoring watersheds/ streams)		Key Watersheds
Species at Risk (numbers and area of effective habitat)	# ha	Nat. Sub-Region

Table 3: List of Indicators used in the NES Strategy.

VALUE, GOAL, INDICATOR	Units	Area of Analysis in Addition to Region
Disturbance analysis		
Area disturbed, by disturbance type	ha	Nat. Sub-Region
Area disturbed by fire/time period	km^2	Nat. Sub-Region
Number of fires/time period	#'s	Nat. Sub-Region
Disturbance patch-size distribution	ha by class	Nat. Sub-Region
Area at risk to Mountain Pine Beetle	km^2	
Deadwood material volume (standing and down)	m^3	Nat. Sub-Region
Anthropogenic disturbance trends	km^2	Nat. Sub-Region
Length of linear developments, by type	km	Nat. Sub-Region
Road density	km/km^2	Nat. Sub-Region
Number and area of well sites	#/ha	Nat. Sub-Region
Area salvage logged after fire	ha and %	Nat. Sub-Region
Percent of AAC and total area logged that is left as residual material	% vol. & area	Nat. Sub-Region
Landscape pattern		
Generalized landscape pattern (fragmentation analysis)	ha/class	Nat. Sub-Region
Generalized cover type (Coniferous, Deciduous, Mixedwood, Grassland, Other), patch size	ha/class	Nat. Sub-Region
Total anthropogenic edge	km	Nat. Sub-Region
Old forest patch-size distribution	ha/class	Nat. Sub-Region
Degree of protection of rare ecological and special natural landscape features	Monitor	Nat. Sub-Region
GOAL: To ensure that the quality of air, water, and soil are at healthy levels.		
Indicators:		
Surface water		
Number of watercourse crossings (by type, i.e. bridge culvert if available)	#/km^2	Watersheds
Area of riparian buffers by cover type	ha/class	Watersheds
Surface water quality: sediment load and water turbidity, mercury, nitrates, selenium, pH, P, N, DO, biomass, algal, bacterial, pesticide,		Watersheds
Quantity, yield and consumption		Watersheds
Lake levels, hydrographs on key lakes, rivers and reservoirs		
Consumption levels (if available)		
Number and area of wetlands (including patch-size distribution)	#/ha/class	Nat. Sub-Region
Water balance changes, evapotranspiration, overland flow, groundwater recharge		
Groundwater		
Groundwater quantity (levels and fluctuation) for major formations (Paskapoo and Brazeau)		Major formations
Groundwater quality for major formations: selenium, mercury, sulphate, nitrates, nitrites and iron		Major formations
Soil		
Soil erosion potential in the White Area		White Area
Loss of soil productivity (CLI classed lands lost to non-productive uses)	ha/class	White Area

Table 3: List of Indicators used in the NES Strategy.

VALUE, GOAL, INDICATOR	Units	Area of Analysis in Addition to Region
Air		
Benzene emissions and number of glycol dehydrators	tonnes/yr.	
Direct CO^2 equivalent emissions	tonnes/yr.	
Direct CO^2 Equivalent Emissions Index (tonnes/m^3 oil equivalent)	tonnes/m^3	
Indirect CO^2 equivalent emissions	tonnes/yr.	
Indirect CO^2 Equivalent Emissions Index (tonnes/m^3 oil equivalent)	tonnes/m^3	
SO^2 emissions	tonnes/yr.	
Sox	tonnes/yr.	
Nox		
Particulate Matter (PM10 and PM2.5)		



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WISE RESOURCE USE

1

Goals:

- To optimize all value-added opportunities from the resource.
- To minimize waste.
- To encourage sustainable use.
- To integrate activities among all stakeholders and governments.

1.1 Forestry

ISSUES

- There is continued pressure to access the land within Forest Management Agreement (FMA) areas for other purposes, such as oil and gas exploration and extraction, tourism, small business and urban expansion, as well as protection and conservation.
- Natural disturbance processes such as fire, insects and disease have the potential to create significant impacts on resource availability, particularly for the forestry sector.
- There are substantial benefits to be gained through coordinating the industrial footprint both within and between sectors (particularly energy and forestry). The potential benefits include capital and operating cost savings, resource protection, as well as environmental impact reduction through lessening of the industrial footprint.
- Enhanced forest management offers opportunities to offset the loss of productive land and fibre to other land uses and natural disturbances.
- There are opportunities to develop agroforestry and woodlot forestry on private lands in the White Area as a means to augment Green Area production.
- Good forest practice contributes to carbon management.

STRATEGIC DIRECTION

Maintain an economically and environmentally sustainable forest industry in the region.

ACTIONS

1.1.1 Develop a regional approach to enhanced forest management with consideration of multiple jurisdictions, multiple sectors and social, economic, Aboriginal and environmental values.

  - Allow forest companies to apply enhanced forest management techniques in specified areas to maintain the stability and growth of the forest industry, and so that they can offset any loss of landbase and associated AAC due to competing land-use needs.
  - Enhanced forest management in the Green Area should use native, locally adapted tree species in order to conserve the region's natural genetic variability.

1.1.2 Manage the landbase excluded from timber harvesting to approximate natural disturbance regimes. Strategies should be developed in partnership between government and FMA holders.

1.1.3 Establish objectives for wildfire salvage logging and for residual structure within harvest areas, recognizing both the importance of wood fiber recovery and the importance of naturally disturbed habitat and residual vegetation for biodiversity.

1.1.4 Encourage all sectors to adopt a cumulative effects management approach to coordinate resource development in areas experiencing multiple land uses. (See Chapter 3 Cumulative Effects Management in the main document for details.)

- Develop a process to coordinate planning in the forestry, oil and gas, and other sectors such as recreational use.
- Modify spatial and temporal practices where feasible to minimize the cumulative footprint of development.
- Identify and promote industrial best practices that create minimal disturbance (e.g. improved design and placement of seismic lines, rapid reclamation and reforestation of roads, cutlines, well pads, etc. that are no longer required).
- Support ongoing research on the links between industrial activity and ecological systems, such as the NSERC/ACR/Al-Pac Industrial Research Chair in Integrated Landscape Management established at the University of Alberta.

1.1.5 Encourage joint ventures between the forestry and agriculture sectors – e.g. agroforestry and woodlot forestry as a source of wood fibre for mills and additional income for agricultural producers.

- Identify land in the White Area with potential for agroforestry and woodlot forestry.
- Promote the benefits of these alternative production systems to the rural community.
- Encourage cooperative arrangements between private landowners and forest companies to facilitate woodlot forestry on private lands.
- Consider the use of municipal tax incentives to encourage agroforestry and woodlot forestry on private lands.

1.1.6 Encourage cooperation and sharing of forest management related research, such as silviculture research and other forest management techniques. Establish a regional research database.

1.1.7 Encourage certification (eco-labelling) of forest products from sustainably managed FMAs and private lands.

1.1.8 Allow forestry industries to utilize greater harvest flexibility more closely approximating the natural range of variability of natural disturbance. Harvest increases (and associated declines) may reflect economic cycles in the industry while at the same time approximating peaks in natural disturbance. Production must equate to the total AAC over twenty years. Utilize greater harvest flexibility to combat disease, insects and pathogens.

1.1.9 Reduce the economic impacts on the forest industry from natural disturbances by aggressive fire and pest control. Prepare a regional fire management plan.

1.1.10 Identify lands in the Green and White Areas with a high potential for agriculture, agroforesty or forestry that are currently underutilized; explore possible land-use conversion between these industries on appropriate lands.

See also 1.4 for other relevant recommendations.

1.2 Oil and Gas

ISSUES

- 77% of the region is held under oil and gas agreements (provincial Tenure commitments).
- Certain areas of the region are still in the early stages of exploration with a high potential for the discovery of large gas pools. Coordinating the industry footprint (i.e. with the forestry sector) to minimize cumulative effects has potential benefits, such as decreased costs and decreased environmental impact.
- In areas currently producing oil and gas, the average production per well per year is naturally decreasing over time.
- Declining oil reserves and new resource types (coalbed methane) could require expanded surface access opportunities or better technology to support an increase in well density and the number of wells required to extract the resource.
- Gas production in the region is currently increasing due to increased exploration and development in response to price and demand.
- Commodity price is a primary driver of oil and gas activity and outside the control of a regional strategy. Due to varying commodity prices and geological uncertainties, forecasting specific energy exploration activity beyond five years is speculative. Given the competitive nature of the industry, options for long-term coordinated industry-wide planning are limited.
- Once production has been established, the facility life and associated economic activity is predictable. Major oil and gas pools can produce for a timeframe in excess of thirty years.
- Linear disturbances related to past seismic data acquisition have been a concern; however, low-impact seismic acquisition is reducing these impacts.
- As wells and fields are depleted, it is imperative to ensure abandonment and reclamation procedures follow best practices.
- Land-use decisions restricting surface access or increasing regulations (thus increasing cost of compliance) decrease the viability of resource extraction. Excluding Jasper National Park, 12% of the region is currently listed as no surface access for oil and gas. A reduction in production will have a significant economic impact on provincial revenues, jobs and other industries (forestry, manufacturing, etc).
- The cyclical nature of primary resource extraction industries often results in economic volatility. The projected long-term decline in energy production that will affect the economy and communities is of particular concern.

STRATEGIC DIRECTION

Encourage the sustainable development of oil and gas in the region while maintaining the region's environmental and cultural values.

ACTIONS

1.2.1 Ensure existing tenures in areas subject to SLPs (or potentially subject thereto) are incorporated into the planning processes.

1.2.2 Commit to the implementation of a coordinated Access Plan in the Caribou Area in time for the Winter 2003/2004 drilling season.

1.2.3 Continue to mitigate the potential effect of linear disturbances through the application of low-impact seismic acquisition techniques.

1.2.4 Give consideration to mechanisms such as poolings, holdings and unitization of interests, in order to optimize the industrial footprint associated with new pool developments.

1.2.5 Ensure cohesion between these guidelines and those proposed by the EUB in respect of sour gas development near people; in particular those guidelines relating to the Planning and Proliferation of Sour Gas Infrastructure.

1.2.6 Encourage alternatives to freshwater (e.g. brackish water) for subsurface injection in the oil and gas sector.

1.2.7 Ensure water source wells associated with drilling and completion operations are properly abandoned so as to minimize the risk of groundwater contamination.

1.2.8 Develop guidelines and best practices concerning access controls on industrial roads in the Green Area.

1.2.9 Give consideration to mechanisms to extend tenure in circumstances where it is necessary to provide enough time to address public concerns relating to development.

1.2.10 Ensure coordination between CAPP and SEPAC regarding the development of best practices.

1.2.11 Ensure the EUB's role in the proposed Cumulative Effects Management System is clearly delineated.

1.3 Mining

ISSUES

- Long-term mining operations have provided employment stability within communities. However, coal mining is highly dependent on external factors such as commodity prices and the regulatory environment of foreign buyers.
- The number of coal leases and mines in operation has not increased recently due to low international commodity prices. However, mining companies may hold these leases in reserve for many years. Expansion of electricity generation, progress in clean coal technology, or other changes in market conditions may lead to a resurgence of the industry in the future.
- There is potential to increase mining activity for diamonds, precious metals, base metals and industrial metals. Many potential deposits have been inadequately evaluated and the NES region is a favourable geologic setting to find new deposits. Access to the deposits is an issue facing this sector.
- There is the potential for conflict between mining and other land uses and values such as recreational use and wilderness quality.
- The cyclical nature of primary resource extraction industries often results in economic volatility. The projected long-term decline in energy production that will affect the economy and communities is of particular concern.

STRATEGIC DIRECTION

Recognizing that mining is a temporary land use that allows for other successor uses, allow the orderly, economic and environmentally sustainable extraction of basic raw material resources in key identified areas.

ACTIONS

1.3.1 Support continued exploration and assessment of land to clearly define areas with mineral resource potential.

1.3.2 Ensure that planning and management of mineral resource exploration and extraction is well integrated with other regional and local planning processes.

1.3.3 Ensure that aggregate resources (sand and gravel) near major regional communities are identified and protected for long-term supply options.

1.3.4 Support continued research into mine reclamation and impact mitigation techniques.

1.4 Agriculture

ISSUES

- Artificial administrative boundaries (e.g. Green Area/White Area) do not adequately reflect the productivity of the land for agriculture or for timber production. Consequently, there is an underutilized potential for agriculture on some public lands.
- Maintaining good quality agricultural land is important for the long-term sustainability of the region's agricultural industries. Some loss of productive agricultural land is occurring due to poor land management practices and the encroachment of urban, rural residential, industrial and other uses onto agricultural land.
- Impacts of rural residential subdivisions can extend to a larger agricultural area beyond the actual land that is being developed. Conflicts tend to arise between rural residents and neighbouring agricultural producers over issues such as noise, dust, odour and chemical handling.
- The potential to convert more new land into agricultural production is relatively limited. In order to increase revenue generation of the agricultural sector, there is a need to modify, diversify and/or intensify the use of existing grazing and agricultural land.
- Inappropriate agricultural management practices can have detrimental impacts on air, water and soil quality, accelerate soil erosion and reduce land productivity. Improvements in on-farm land use can assist in conservation of biodiversity and natural ecosystem values.
- Land rehabilitation, conservation and re-establishment of natural areas on agricultural lands can provide important societal benefits such as improved water quality, flood protection, biodiversity conservation and habitat for wildlife. However, it may be difficult for individual farmers and landowners to absorb the cost of these activities in terms of decreased production and revenue.
- There has been a change in the approval process for Confined Feeding Operations (intensive livestock operations) from local control to provincial government authority, creating concerns for local municipalities and residents.
- There is a shortage of skilled farm labour as a result of seasonal employment and wages that cannot compete with other industry sectors.

STRATEGIC DIRECTION

Increase agricultural revenues by 20% over the next ten years.

Maintain and enhance agricultural opportunities in the region commensurate with land capability and land-use compatibility.

ACTIONS

1.4.1 Develop provincial-level land-use policy and guidelines that address inherent land capability and that provide direction to all regional strategies and land management processes. This policy initiative should be undertaken in collaboration with all appropriate government levels and agencies, as well as other stakeholders to meet the needs of all sectors.

- Establish a body to review and update the guidelines over time.
- Identify lands with potential for agriculture and forestry; explore possible land-use conversion.
  - Complete an assessment and mapping of regional land capability and productive potential in both the Green and White Areas.
  - Develop criteria to select potential areas for land-use (agriculture and forestry) conversion based on the assessment of land capability.
  - Make this information readily available to the agriculture and forestry industries, as well as land and resource planning and management authorities.
- Develop broad provincial policy and principles to guide regional and municipal planning for urban growth and rural residential development. A general policy should consider long-term implications of development and set out guidelines to guide future decisions, with consideration of issues such as:
  - Proximity to trading centers;
  - Land productivity and capability;
  - Environmental concerns;
  - Infrastructure and services; and
  - Adjacent land use.

1.4.2 Develop a regional agricultural strategy to guide future development of the industry, based on sustainable economic and environmental principles.

- Support programs to investigate new markets and develop new value-added products and agribusiness processes for the region's agricultural industry.
- Establish regional linkages with existing agricultural strategies and programs.

1.4.3 Discourage the development or fragmentation of good quality agricultural land for residential or other land-use activities not reliant on the agricultural quality of the land.

- Develop and/or maintain incentives for landowners to retain good quality agricultural land in productive use.
- Incorporate procedures in local government planning schemes to manage rural subdivisions and family transfers to prevent fragmentation of agricultural land holdings.
- Consider the potential impacts on or from agricultural activities in the planning, approval and development of residential subdivisions and other non-agricultural uses in order to minimize future conflicts between rural residents and agricultural producers.

1.4.4 Encourage private woodlot management for multiple resource values including primary fibre production, value-added wood products, tourism, etc.

1.4.5 Facilitate and promote the adoption of best practices for agricultural operations to improve land management practices, increase sustainable production and protect the region's natural resources and environmental quality, particularly in riparian areas and wetlands.

1.4.6 Identify lands in the Green and White Areas with a high potential for agriculture, agroforestry or forestry that are currently underutilized; explore possible land-use conversion between these industries on appropriate lands.

See also 1.1 and 1.6 for other relevant recommendations.

1.5 Grazing and Forage Production

ISSUES

- There is considerable pressure for expansion of grazing ranges on Crown lands. With proper management, grazing can be accommodated alongside other land uses in certain areas. However, there is a need to address issues such as compensation to forestry companies for loss of timber and the impacts on regenerative tree growth.
- There are concerns about overgrazing in some protected areas. For example, grazing management legislation and policy in Willmore Wilderness Park is not consistent and integrated with other objectives.

STRATEGIC DIRECTION

Maintain and enhance grazing opportunities in the region, respecting land capability and land-use compatibility.

ACTIONS

1.5.1 Develop a policy to address grazing opportunities within the Green Area.

- Review and update the assessment of grazing pressure and carrying capacity in the Green Area, including in protected areas.
- Identify potential grazing opportunities in traditional timber harvesting areas, pipelines and other corridors. Explore the potential for forage production on roadway verges in both the White and Green Areas. The analysis should focus on areas in close proximity to current agriculture operations.
- Form a group with representatives from the forestry and agriculture sectors to develop best practices for grazing management within the Green Area. Encourage improved management practices and ensure policies are in place for protection of environmentally fragile areas from grazing activities.

1.5.2 Support development and implementation of the Grazing Integration Plan (GIP) for the Foothills and Woodlands Areas. The GIP is being developed by a committee with members from Alberta Sustainable Resource Development and the agriculture and forestry industries. The plan is expected to be completed by June 1, 2003 and will include the following elements:

- Review of existing policy and resource commitments.
- Development of a rangeland suitability map identifying areas where grazing can be sustained and effectively integrated with other resource values.
- Development of a Grazing Integration Plan providing details on the process for disposition allocation and review, strategies for integration of grazing with other resource values, and a compliance assurance process.

1.6 Urban and Residential Development

ISSUES

- Municipal planning for urban areas needs to identify and provide adequate land and services to accommodate projected demands for population, visitors, housing and economic growth, as well as environmental, social and recreational needs.

- There is a need to coordinate urban and residential planning needs with other government and industrial planning processes to maximize efficient use of land and resources.

- Urban growth and expansion needs to be planned and managed to minimize potential impacts on good quality agricultural lands, productive forest land, water bodies and other natural resources.

- Municipal and urban planning needs to consider the risk of wildfire and develop appropriate strategies to reduce risks and address evacuation and protective measures in the event of a fire.

- Some municipalities have expressed concerns about the limited land available for residential expansion, light industrial development or other community growth needs.

- Implications and options for transferring land to municipalities for urban expansion may include:
  - Paying compensation to FMAs;
  - Transfer of land authority to the municipality while retaining land ownership;
  - Transfer of land ownership and liability of all non-developable and community-use lands to the municipality; and
  - Selling land to developers at market value over time to ensure urban expansion is revenue positive.

STRATEGIC DIRECTION

Identify long-term growth and associated landbase requirements for all urban municipalities.

Provide opportunities and appropriate locations to meet the needs of growing communities while minimizing impact on environmental and resource values.

ACTIONS

1.6.1 Identify community growth requirements for the next 20 to 50 years. Each municipality should develop a Smart Growth Plan / Community Plan that identifies future expansion needs for urban and residential development, and the land areas required.

1.6.2 Develop FireSmart plans for each community that address wildfire risks and mitigation options.

1.6.3 Review the Smart Growth and FireSmart Plans and the issues raised by each municipality and implement appropriate responses.

1.6.4 Undertake land suitability studies to identify future urban development areas and facilitate the best use of available land.

1.6.5 Undertake a review of alternative uses of the land including private lands that may become available for future sale.

See also 1.4, 1.10 and 8.6 for other relevant recommendations.

1.7 Commercial Tourism

ISSUES

- Tourism is increasing in the area but is limited by a lack of land allocated for commercial tourism development. Suitable locations for development, such as highly attractive mountain or lakeside sites, are limited. The allocation process for recreational or tourism development is time consuming and difficult through existing mechanisms.
- Commercial tourism infrastructure is not well developed outside of the National Parks. Accommodation in the region is currently designed to support industrial activity rather than tourism.
- Parks and protected areas provide a landbase for many tourist activities and are an important element of a tourism strategy, but intensity of activities must be balanced with maintaining the integrity of the parks and protected areas.
- Some types of tourism facilities and development are considered incompatible with the preservation objectives and natural heritage values of parks and protected areas.
- The increasing popularity of high-end motor homes and trailers has a reciprocating demand for high-end camping facilities currently not met by provincial campgrounds.
- Opportunities for expanding commercial trail riding are limited. Capacity has largely been reached in the Willmore Wilderness Park while other areas covered by Forest Management Agreements do not readily lend themselves to this activity.
- There are potential conflicts between tourism and other industries and activities in some areas. Interactions and conflicts between tourism and other sectors, such as forestry and oil and gas development, need to be identified.
- The positive and negative impacts of additional tourism need to be clearly identified. While tourism opportunities are an important component of regional economic diversification, there are other implications. Municipal governments are concerned about the cost of servicing remote tourism facilities. Increased tourism can also have negative environmental effects and create conflicts with other land uses.

STRATEGIC DIRECTION

Increase commercial tourism revenues by 20% every five years over the planning horizon.

Provide a policy and land management framework that supports increased opportunities for commercial tourism and recreation.

Define and promote a regional heritage tourism approach or theme with consideration of the unique historical, cultural, aboriginal and ecological values of the area.

Minimize conflicts between commercial tourism and other stakeholders and resource sectors.

ACTIONS

1.7.1 Develop a Comprehensive Tourism Strategy for the region that addresses priority locations and products, promotional and market research needs, and a regional tourism theme. The following are examples of actions that could be part of the strategy development or recommended by the strategy:

- Develop a regional tourism theme based on the unique historical, cultural and natural heritage of the region.
- Adopt a regional approach to marketing the region's tourism industry that includes comprehensive promotion of activities and products from across the region.
- Conduct a comprehensive market assessment of commercial tourism opportunities that build upon the natural strengths and features of the region. Consider the existing tourism markets in the adjacent national parks and examine the potential demand for OHV recreation, adventure and ecotourism.
- Explore the implications of commercial tourism in or adjacent to protected areas. Identify complementary opportunities for suitable commercial tourism and recreational developments within protected areas that comply with existing legislation and landscape objectives.
- Facilitate the provision of a range of sustainable tourism accommodation opportunities throughout the region that is responsive to market demands and appropriately located with respect to services and facilities, and to other industrial land use.
- Conduct market and feasibility studies to support development of new or emerging cultural tourism opportunities such as heritage, Aboriginal, home-stay and rural tourism experiences.
- Encourage and support local industries and community groups that produce and manufacture local art, craft and cultural products and services, and facilitate development of tourist markets for these products.
- Maintain, encourage and continually develop appropriate safety standards, operational procedures and support facilities to ensure visitor well-being at all stages of their stay in the region.
- Monitor visitor expectations and satisfaction levels for the regional tourism experience and provide feedback to industry, product and destination development efforts.

1.7.2 Promote the formation of a board/advisory committee that acts as one cohesive voice for the region's commercial tourism sector in order to foster inter-sector collaboration. Ensure consultation and coordination with any existing initiatives.

1.7.3 Identify the range of opportunities and potential implications for municipal governments with regard to the establishment of lodges, resorts or residential recreational villages. Consider infrastructure costs and taxation revenues.

1.7.4 The Alberta government has signed a Memorandum of Understanding (MOU) with respect to future tourism development on Crown land. This MOU affects a portion of the NES region, directing future tourism development to nine areas along the western portion of the Yellowhead Corridor. The MOU also addresses compensation processes as well as inter-sector coordination.

- Use the Yellowhead MOU as a template for directing development in other suitable locations outside of the parks and protected areas (e.g. Highway 40 north and south).

1.7.5 Identify potential opportunities and suitable locations for development of tourism and recreation activities on Crown lands in the Green and White Areas (e.g. allowing home commercial backcountry lodges in wilderness zones).

1.7.6 Identify potential nodes for commercial tourism development. These areas may include residential cottage development.

- Highlight Grande Cache and Hinton as major nodes for enhanced commercial tourism opportunities. Provide support for development of structure plans for these areas.
- Identify select parks and protected areas (e.g. Switzer Provincial Park) as minor nodes for enhanced commercial recreation and some limited tourism facility development.
- Identify Cadomin and other staging areas near protected areas as minor nodes for commercial recreation and tourism development.

1.7.7 Identify and promote Aboriginal and culturally-based tourism opportunities on First Nations lands, traditional use areas, and on public lands in cooperation with Aboriginal communities.

1.7.8 Designate potential scenic routes within the region.

- These include Highway 43, Highway 16 and Highway 40 north and south of Highway 16.
- Encourage appropriate development along the Grande Alberta Trail as a major scenic route and alternative route to Alaska.
- Major rivers in the region.

1.7.9 Continue to explore potential for a Canadian Heritage Rivers designation of a section of the Athabasca River in partnership with Woodlands County. If designated, then work with a stakeholder group to develop a tourism marketing plan to promote the river as a Canadian Heritage River.

1.7.10 Promote a network of trails and associated hut/backcountry lodge opportunities adjacent to or within protected areas, or areas managed for wildland characteristics. Consider segregated systems for motorized and non-motorized use.

1.7.11 Utilize enhanced visual resource management techniques within viewsheds of major highway and river corridors as well as within critical recreation and commercial tourism areas. (See to Section 3.2 for principles.)

1.7.12 Identify areas where conflicts exist between commercial tourism goals and other industries (e.g. visual resource management) and develop a cooperative process to identify potential mitigation strategies. Facilitate opportunities for discussion and improved relations between the different sectors.

See also 8.1, and Value 3 for other relevant recommendations.

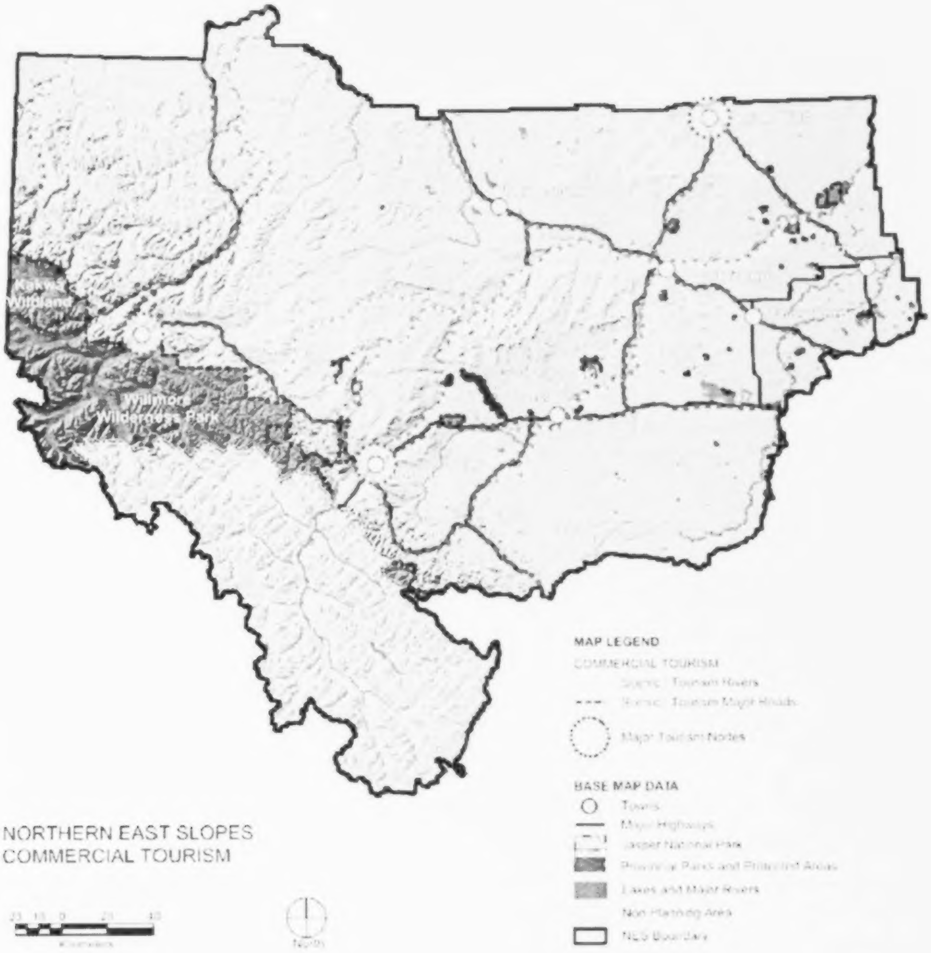
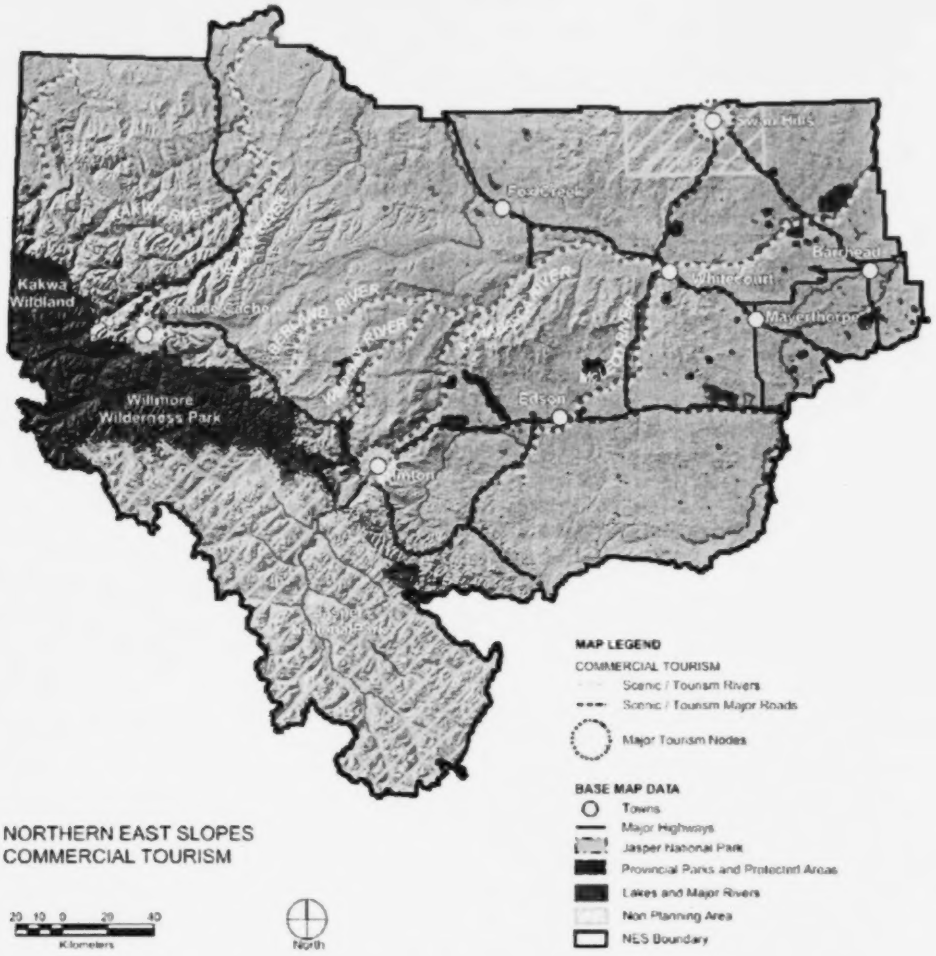

Kakwa Wildland
Willmore Wilderness Park
MAP LEGEND
COMMERCIAL TOURISM
Scenic / Tourism Rivers
Scenic / Tourism Major Roads
Major Tourism Nodes
BASE MAP DATA
Towns
Major Highways
Jasper National Park
Provincial Parks and Protected Areas
Lakes and Major Rivers
Non Planning Area
NES Boundary
NORTHERN EAST SLOPES
COMMERCIAL TOURISM
25 15 0 25 50
Kilometers
North

Figure 12: NES Commercial Tourism Map.


Swan Hills
Fox Creek
Whitecourt
Barrhead
Mayerthorpe
Kakwa Wildland
KAKWA RIVER
Grande Cache
BERLAND RIVER
WILDHAY RIVER
Willmore Wilderness Park
Edson
Hinton
MAP LEGEND
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Non Planning Area
NES Boundary
NORTHERN EAST SLOPES
COMMERCIAL TOURISM
20 10 0 20 40
Kilometers
North

Figure 12: NES Commercial Tourism Map.

1.8 Protected Areas

ISSUES

- There is a need for greater coordination of planning and management between protected areas and adjacent land managers and users.
- Currently, there is no formal monitoring program or identified measures to assess the ecological integrity of provincial parks and protected areas. These measures need to consider internal functioning as well as broader issues such as landscape connectivity and adjacent land use.
- Parks and protected areas need to be linked with expansion of commercial tourism and recreation opportunities for mutual benefits. Policies and strategies are needed to identify opportunities and minimize conflicts.
- Willmore Wilderness Park needs an updated management plan in response to increased use. Overcrowding in proximity to the staging areas limit the experience that guides and outfitters want to offer, especially to their international clientele who seek a pristine wilderness experience. Over-grazing by outfitters and recreational horse users is also a concern in some areas. Other conflicts between multiple users are also probable.
- Protected Areas Management Plans are essential to provide clear, consistent and coordinated direction to manage all activities within the area. Several new protected areas have been established in the region in recent years that do not yet have management plans. There is a lack of resources to prepare and implement management plans.

STRATEGIC DIRECTION

Integrate and link the management of protected areas with the management of adjacent areas and the broader landscape.

ACTIONS

1.8.1 Develop management plans for any protected areas that do not currently have them in a prioritized and timely manner, as resources are available.

1.8.2 Ensure that development of finer-scale plans for protected areas and the land that surrounds them addresses adjacent land use, connectivity and risk management (e.g. Mountain Pine Beetle infestations).

1.8.3 Develop or update a detailed management plan for Willmore Wilderness Park addressing appropriate levels of use.

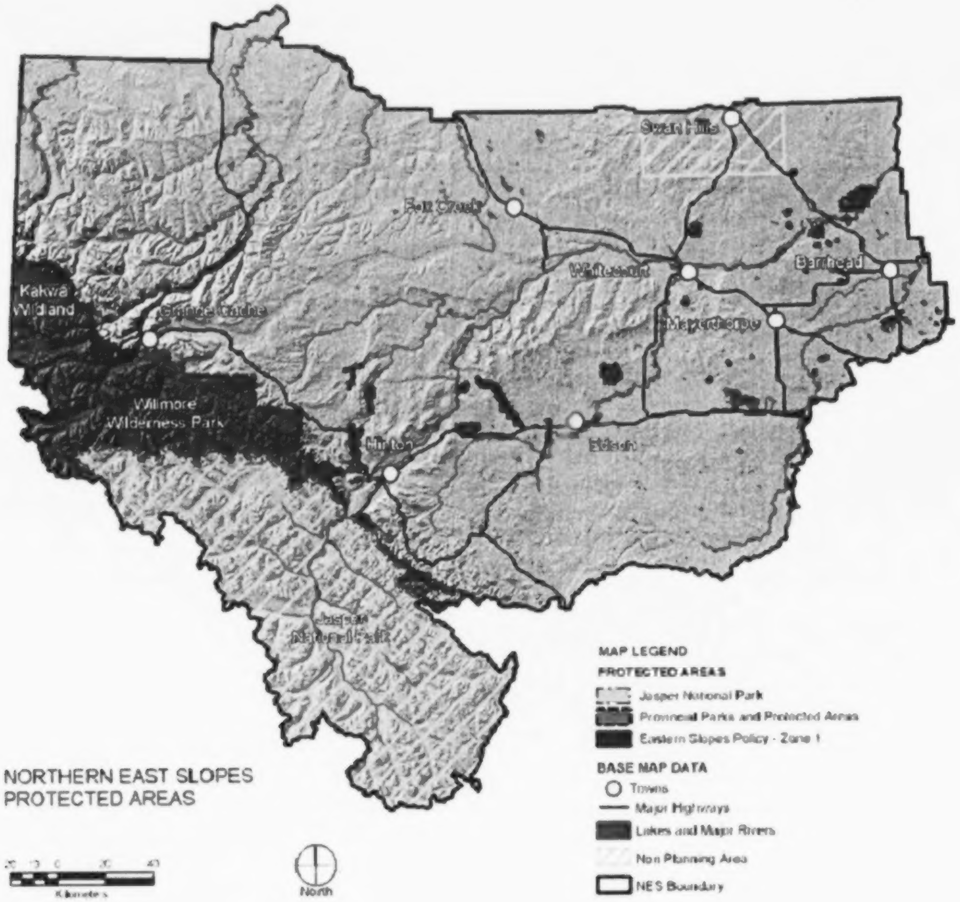

Swan Hills
Fox Creek
Whitecourt
Barrhead
Mayerthorpe
Kakwa Wildland
Grande Cache
Willmore Wilderness Park
Hinton
Edson
Jasper National Park
NORTHERN EAST SLOPES PROTECTED AREAS
MAP LEGEND
PROTECTED AREAS
Jasper National Park
Provincial Parks and Protected Areas
Eastern Slopes Policy - Zone 1
BASE MAP DATA
Towns
Major Highways
Lakes and Major Rivers
Non Planning Area
NES Boundary
20 10 0 20 40
Kilometers
North

Figure 13: NES Protected Areas.

1.9 Hunting and Trapping

ISSUES

- The protection of critical wildlife habitat has become more challenging due to the combined impacts of timber harvest, the energy industry and increased recreational pressures.
- Currently, there is no comprehensive mandate to ensure that a diversity of furbearer habitat is maintained within each Registered Fur Management Area.
- Maintenance of wild game populations at sustainable levels for hunting is a concern.
- Trapper cabins are often used as base camps by outfitters for both hunting and trail riding. The provincial Voluntary Trapper Cabin Policy is not enforced, resulting in unauthorized use of trapper cabins for commercial tourism and general recreation activities.
- Users wish to gain access to reclaimed mine sites for hunting and general OHV use.

STRATEGIC DIRECTION

Maintain sustainable hunting and trapping opportunities by conserving wildlife populations and habitat and providing appropriate access and facilities.

ACTIONS

1.9.1 Reduce unauthorized use of trapper cabins for commercial tourism and general recreational activities.

1.9.2 Address OHV user desire to use mine sites for hunting and general OHV use.

1.10 Fire Management and Planning

ISSUES

- Cumulative effects analysis has indicated that the sustainability of the forest sector could be severely impacted by natural disturbance events (insect, disease and wildfire).
- There is a need to incorporate the impact of wildfire into integrated resource planning and management. Many stakeholders have not yet included wildfire into their development plans. Regional-scale objectives for natural disturbance and landscape pattern would provide context and direction for Detailed Forest Management Plan (DFMP) level objective setting and other resource extraction activities.
- Fire and pest management are not well integrated between protected areas and other lands and may have different strategies and policies, making it difficult to achieve consistent regional objectives.
- Many communities may be at risk from wildfire during one or more seasons of the year. There remain a number of communities for which risk assessments have not been completed.
- There is a continued need to reduce human-caused fires.

STRATEGIC DIRECTION

Incorporate the impact of wildfire into integrated planning and resource management. Aggressively control wildfires in the context of a Regional Fire Management Plan.

ACTIONS

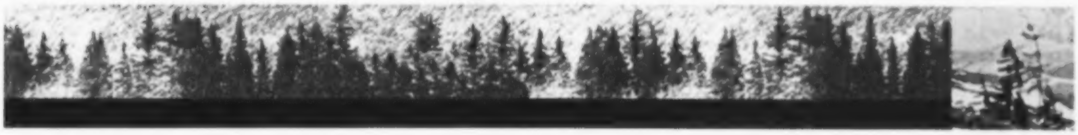
1.10.1 Prepare a comprehensive Regional Fire Management Plan that addresses the following issues:

- Role of natural disturbance in landscape management;
- Risks to resource sustainability and implications for the forest industry;
- Reduction of human-caused fires;
- Landscape fuel modification;
- Community safety; and
- Integrated management of protected areas and the surrounding landbase, recognizing the intent to allow natural disturbances when possible.

1.10.2 Using the Whitecourt Landscape Fire Assessment plan as a template, conduct landscape fire assessments across the rest of the Green Area in the region.

1.10.3 Develop FireSmart plans for specific communities and locations and implement measures to reduce risk in communities across the region.

See also 1.6 and 8.6 for other relevant recommendations.



INTEGRITY AND FAIRNESS IN DECISION MAKING

2

Goals:

- **To assure that the decision-making process is timely, transparent, predictable, consistent, fair and equitable.**
- **To ensure decisions are made and revisited in light of current science, technology and societal values.**

2.1 Integrated Planning and Management

ISSUES

- Coordination of planning among industry sectors can be challenging due to differences in tenure systems, access requirements and planning horizons. There is a need to understand each industry's priorities and planning requirements and the impact of activities on other sectors.
- Coordination of planning among sectors is especially important when two or more industries are operating in the same area. Effective planning can minimize the development footprint and help ensure that one sector does not damage the resource base of another.
- There is a need to assess the long-term sustainability of current levels of development and resource use. More information is required to understand and manage the cumulative impacts of all development and resource use activities on a range of societal and environmental values.
- Policy, planning and management are not sufficiently coordinated among provincial, federal and municipal decision-makers and different agencies. The current approval system operates on a disposition-by-disposition basis, in the absence of an overall regional development vision and framework.

STRATEGIC DIRECTION

Ensure a coordinated and consistent approach to land and resource management at all levels of government and industry planning and decision making.

Simplify and coordinate the regulatory environment to enable economic opportunities across a broad range of sectors.

Sustainable development in the region requires resource development while at the same time protecting key societal and ecological values. Resource management processes should consider the economic opportunities, the long-term productive potential of the land, the sub-surface productivity, and the cumulative impacts of resource development on a range of societal and environmental values.

Reduce the cumulative footprint of development by requiring coordination between sectors and implementing a Cumulative Effects Management System.

ACTIONS

2.1.1 Create a Cumulative Effects Management System (CEMS) with the following components: (See Chapter 3 Cumulative Effects Management in main document for details.)

- Regional advisory body to review and comment on progress towards the regional goals and to provide periodic renewal of the strategy;
- Cumulative Effects Technical Support Group to provide data management and cumulative effects assessment; and

- An integrated approval and management process to be provided through government processes.

A Planning Framework including sub-regional Sustainable Landscape Plans (SLPs) that will be carried out *only* for areas where multiple values conflict and economic activity is driving rapid change.

2.1.2 Encourage all sectors to adopt a Cumulative Effects Management approach to resource development in the region.

2.1.3 Review reforestation and reclamation guidelines with the view of enhancing cumulative effects management.

2.1.4 Establish or strengthen mechanisms to coordinate planning and development activities, and share information and resources across and between provincial and municipal governments and other agencies with land and resource management responsibility.

See 8.1 for other relevant recommendations, and Chapter 3 Cumulative Effects Management in main document for details.

2.2 Community and Stakeholder Involvement

ISSUES

- Planning and development processes need to be relevant to the needs and aspirations of the region's communities. Effective consultation and participation contribute to good planning and development outcomes that meet the needs of all stakeholders. Effective community involvement will also establish a sense of ownership of planning decisions.
- There is need for public education about the NES Strategy and other planning processes in order to increase awareness and effective participation.
- Community involvement in volunteer and pilot projects (e.g. monitoring programs) can provide valuable data and also increases community interest and commitment to natural resource management.
- Limited resources and competing priorities often limit effective participation by the community in planning and decision-making processes.

STRATEGIC DIRECTION

To involve stakeholders and the community in planning and decision-making processes on an effective and equitable basis.

ACTIONS

2.2.1 Review mechanisms and resources available to assist community involvement in planning and policy making processes.

2.2.2 Encourage the appointment of a broad range of community and sector representatives to regional committees, boards and working groups in order to achieve more effective and equitable participation in development planning and decision making.

2.2.3 Improve and facilitate Aboriginal community involvement in natural resource planning and management processes.

2.2.4 Develop public awareness and educational programs to help the broader community understand the NES Strategy and other planning processes in order to foster meaningful involvement.

2.2.5 Identify and support appropriate and viable community-based natural resource management and monitoring programs.

See 5.1, Value 7, and 8.1 for other relevant recommendations.

2.3 Provincial Policy

ISSUES

- Regional and sub-regional planning and resource management should take direction from clear and consistent provincial policy that also provides the flexibility to address local conditions and issues.
- There is currently no provincial land-use policy to guide regional and municipal land managers regarding the most efficient use of the land based on productive potential.
- The long-term economic sustainability of the region may require reconsideration of land-use policy to allow for expansion and diversification of other sectors. For example, existing policy for the Green and White Areas limits the possibilities for rural residential and agricultural expansion in the region.
- There are perceptions that resource sectors are competing for use of the land on an uneven playing field in terms of planning and regulatory requirements.
- Allocation and management of land tenure and dispositions is not coordinated among different sectors. Individual industries feel little long-term security due to overlapping dispositions and rights.
- Existing tenure commitments can potentially limit the management options available to government or industry to address other environmental and social values.
- Government does not have sufficient resources to deal adequately with high volumes of development applications and renewals.
- Limited government resources make it difficult to enforce existing guidelines.
- The roles, responsibilities and structure of different government agencies and the overlap of different legislation and mandates are occasionally confusing.

STRATEGIC DIRECTION

Provide an integrated provincial policy and management framework that supports sustainable economic development across all sectors.

ACTIONS

2.3.1 The Eastern Slopes Policy will continue to apply to the NES region. The government should consider modifications to zonation and guidelines where appropriate, particularly the critical wildlife zone, due to a change in focus from ungulate management to species of concern and biodiversity.

2.3.2 Review industry-specific regulations and guidelines and develop more consistent requirements between different sectors. For example, in the areas of:

- Application procedures;
- Decision criteria;
- Operational codes of practice;
- Consultation requirements;

- Reclamation standards; and
- Monitoring and reporting.

2.3.3 Develop provincial-level land-use policy and guidelines that are reflective of inherent land capability and that provide direction to all regional strategies and land management processes. This policy initiative should be undertaken in collaboration with all appropriate government levels and agencies as well as other stakeholders to meet the needs of all sectors. Set up a body to review and update the guidelines over time.

2.3.4 Based on an assessment of regional land capability and productive potential in both the Green and White Areas, consider allowing land-use conversion in specified areas to ensure the most efficient use of the land's productive capacity.

2.3.5 Develop broad provincial policy and principles to guide regional and municipal planning for urban growth and rural residential development. A general policy should consider long-term implications of development and set out guidelines to guide future decisions, with consideration of issues such as:

- Proximity to trading centers;
- Land productivity and capability;
- Environmental concerns;
- Infrastructure and services; and
- Adjacent land use.

2.3.6 Develop policy and an incentive system to promote conservation and land rehabilitation activities on private lands by putting an economic value on ecosystem services that benefit society as a whole (e.g. tax incentives or compensation).

2.3.7 Ensure common standards for reclamation, best practices, etc. are included in all approval conditions.

2.4 Research

ISSUES

- Management decisions are not always clearly based on scientific information.
- Research tends to be focused on specific issues that may not be useful for understanding the broader picture of cumulative effects.
- The majority of current research is focused on biophysical issues. A greater focus on economic and social issues is required to help provide a more balanced base of information.
- It appears that similar studies are being conducted by different organizations. It is unclear whether some of the work is redundant.
- More accessible information and communication is required about ongoing research programs and results.

STRATEGIC DIRECTION

Encourage coordinated applied research that supports integrated resource management.

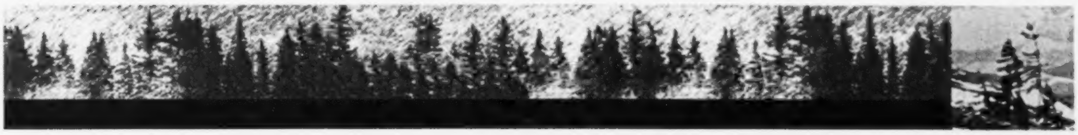
ACTIONS

2.4.1 Establish a voluntary reporting system through which researchers can submit information on current projects on an annual basis.

2.4.2 Develop a data management process with consistent standards and consolidate regional research results into a central data repository that is easily accessible to government and industry planners and decision makers.

2.4.3 Support Traditional Use Studies for Aboriginal users of the land in the region to clearly identify traditional use sites, and apply appropriate information in land-use planning and decision making.

See also Chapter 3 Cumulative Effects Management in main document for details.



PUBLIC ENJOYMENT OF THE GREAT OUTDOORS

3

Goal:

- **To provide opportunities for responsible enjoyment and appreciation of our natural environment.**

3.1 Recreation Use

ISSUES

- The region's climate, natural diversity and landscapes support a broad range of outdoor recreation pursuits. These include activities such as hiking, camping, fishing, hunting, rafting, canoeing, photography, bird watching, rock climbing, bike riding, horse riding and off-highway vehicle use. Different recreational activities require different environments or involve activities that may infringe upon the concurrent enjoyment of other activities. Activities may need to be appropriately separated or combined in order to provide user satisfaction.

- Increasing and conflicting public demands for recreational access on Crown lands include the demand to maintain the wilderness and roadless characteristics of portions of the region, as well as the demand for increased opportunities for motorized recreation in the region.

- It may be difficult to meet other resource objectives, such as habitat protection or efficient resource extraction, if recreational access on industrial-use areas is unlimited.

- There is no provincial recreation use policy for Crown lands, with the exception of protected areas and forest land-use zones.

- There is a lack of enforcement resources to effectively regulate recreation use in those areas that have guidelines and legislation.

Camping

- An improved road network and increasing population will result in a demand for more camping and day use facilities in some areas. Provincial Recreation Areas (PRAs) provide camping and day use opportunities where fire, human waste and garbage can be effectively managed. There is a concern that high fees and an inadequate supply of campsites could lead to more random camping.

- Increased use of off-highway vehicles is resulting in increased backcountry camping in formerly remote areas.

- Much of the infrastructure in parks such as campgrounds and day use areas was built in the 1970's and little upkeep and maintenance has been done for more than a decade. Investment in site maintenance requires adequate revenue from user fees or other sources.

- The increasing popularity of high-end motor homes and trailers has a reciprocating demand for high-end camping facilities that is currently not met by provincial campgrounds.

Off-Highway Vehicle Use

- The major issue for OHV users is increasing access to suitable areas for motorized recreation. Access has been restricted along the Northern East Slopes by the designation of forest land-use zones and new protected areas. Restrictions have been in place since the Coal Branch Access Management Plan was completed in 1993. Users wish to regain access to these areas, as well as to reclaimed mine sites for general OHV use.

- Motorized recreation is generally considered incompatible with the preservation objectives and natural heritage values of parks and protected areas.

Recreation Corridors

- There is a need to identify suitable tourism nodes and scenic routes to promote an integrated approach to increased tourism development.

STRATEGIC DIRECTION

Create sustainable opportunities for a wide range of recreational activities while maintaining a publicly acceptable balance between recreational access and environmental protection.

Recognize that Off-Highway Vehicle (OHV) use is a legitimate recreational activity and provide appropriate locations for OHV use.

Provide a recreation corridor network that supports tourism and recreation development and meets community needs in an ecologically sustainable manner.

ACTIONS

3.1.1 Review existing plans and develop a Regional Recreational Access Framework that accommodates existing and projected types and levels of recreational access and activities (including OHV use). The framework will classify the entire region into the following broad categories:

- Areas with no restrictions on OHVs;
- Areas where OHVs are restricted to designated trails;
- Areas where OHVs are prohibited; and
- Areas where seasonal restrictions apply.

These broad zones will give direction to, and provide a regional context for finer-scaled access management plans.

3.1.2 Minimize potential conflicts between user groups (e.g. between horses and off-highway vehicles). Recognize seasonal variation in impacts of various uses (e.g. snowmobiles vs. quads).

3.1.3 Provide opportunities for the involvement of various stakeholders from the recreation and tourism sectors, parks and protected areas, as well as the general community in planning and management of recreational activities.

3.1.4 Manage public access and random recreational use with consideration for other resource values, such as wildlife and biodiversity requirements and efficient resource extraction.

3.1.5 Mitigate effects of backcountry camping and general random use on Crown land by:

- Identifying suitable lands for campground development;
- Ensuring adequate supply and maintenance of designated campgrounds and recreational facilities; and
- Specifying limitations on where and how it occurs.

3.1.6 Promote incorporation of interpretive and educational components into nature-based recreation activities.

3.1.7 Designate appropriate areas where motorized and non-motorized tourism are allowed. Include areas where OHVs are excluded, areas where use will be restricted to designated trails, and areas where use is unrestricted.

3.1.8 Identify opportunities for OHV and snowmobile groups to develop trails and associated facilities on multiple-use Crown lands.

- Identify areas where OHV and snowmobile trails can be linked. (For example, initiate trail studies to link Hinton, Grande Cache and Whitecourt in a circular loop.)
- Identify major motorized vehicle zones in the region. Develop trail systems in these zones.
- Identify and develop routes around recently designated protected areas that do not compromise linkage and integrity values of the protected areas.

3.1.9 Consider establishment of a fund to finance recreation management and ATV trail maintenance similar to the Pitman Robertson Fund in the US, based on a surcharge on outdoor recreation equipment purchases.

3.1.10 Designate potential scenic routes within the region, including: (See map below)

- Highway 43, Highway 40 north and south of Highway 16 and Highway 16;
- Cardinal Divide;
- Major rivers in the region; and
- The Canadian National Railway.

3.1.11 Designate potential trails within the region, including:

- A hiking/biking/horse riding trail system from Hinton to Grand Cache;
- Corridor or trail linkages to the south of the region; and
- A network of trails with linkages to Willmore Wilderness Park and Jasper National Park.

3.1.12 Consider the development of a hut system for both motorized and non-motorized recreationists.

See also 1.7, 1.8, and Value 4 for other relevant recommendations.

3.2 Visual Resource Management

ISSUES

- Regional and local aesthetics are important considerations affecting the tourism industry, public enjoyment of recreational activities, and the quality of parks and protected areas.
- There are potential conflicts between tourism and resource extraction industries in some areas. Greater understanding is needed of how tourism requirements, such as visual quality, will constrain the forestry industry and other sectors.

STRATEGIC DIRECTION

To maintain the scenic quality of the region's landscapes and minimize any negative visual impacts from human intervention.

ACTIONS

3.2.1 Establish areas where enhanced visual resource management techniques will be applied. These should be applied (at a minimum) to the areas indicated on the following Map of Areas of Enhanced Visual Resource Management.

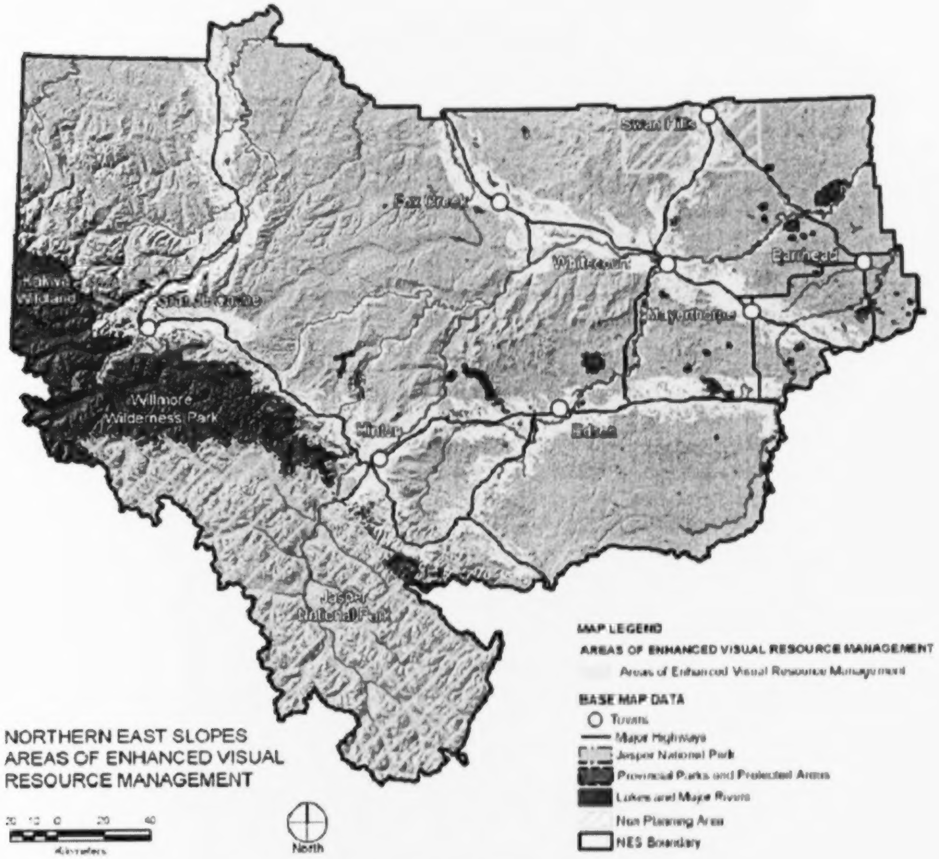
3.2.2 Areas requiring facility development (i.e. energy, extraction transmission, roadways, R.O.W., etc.) need to be screened to reduce their visual impact. If screening is not possible, the placement of such facilities should be designed to reduce their impacts.

3.2.3 Maintain visual quality in the region by requiring visual assessment for all resource development activities and advocating visual resource management techniques as best practices.

3.2.4 Graphic simulation of major interventions within the area of enhanced visual management should be encouraged.

3.2.5 Undertake public visual preference studies for various interventions and mitigations.

See also 1.7 for relevant recommendations.


Swan Hills
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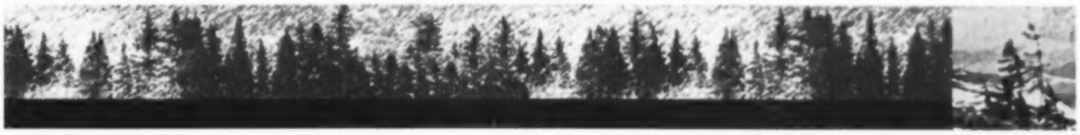
North

Figure 14: NES Areas of Enhanced Visual Resource Management.



WILDERNESS

Goals:

- **To integrate management of designated protected areas within the regional landscape.**
- **To ensure wilderness lands are maintained.**

4.1 Wilderness

ISSUES

- Mapping of potential wilderness lands/zones indicates that large areas within the Green Area have wilderness characteristics. The bulk of this lies in the southwestern portion of the NES region. The eastern regions of the NES contain much smaller areas of undisturbed wilderness, predominantly due to the fractioning of the landscape by pipelines, cut lines and roadways.
- There are views that wilderness lands/zones must be inaccessible to motorized vehicles. The rate of access of non-motorized travelers should be low enough to ensure a feeling of solitude while within wilderness lands/zones.
- There are views that wilderness lands/zones must be large enough to allow for extended hiking and camping trips without contact with human facilities.
- The Willmore Wilderness Park is frequently portrayed as a large under-utilized resource, yet lack of management over increasing use is diminishing the wilderness qualities for local and international tourists.

STRATEGIC DIRECTION

Maintain relatively undisturbed areas within the region in order to maintain the visual and ecological resources, and to provide for recreational users seeking a wilderness experience.

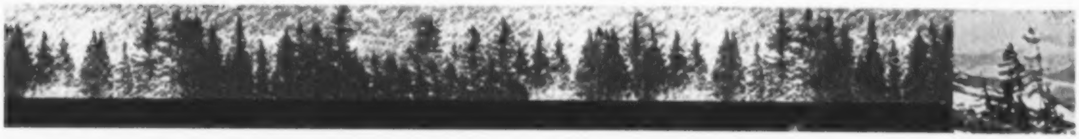
Retain all existing legislated Wilderness Areas and Wildland Provincial Parks.

ACTIONS

4.1.1 Identify areas where large patches with natural characteristics and low road densities will be retained for reasons of landscape connectivity, especially with existing parks and protected areas, effective wildlife habitat and public enjoyment. Effective regional integrated planning should allow these large patches to persist, while at the same time allowing resource extraction.

4.1.2 Ensure the continued protection (including resource extraction exclusion) for all areas currently formally designated as Wilderness or Wildland.

4.1.3 Maintain the Wilderness designation on all existing Wilderness and Wildland areas in the region. The present Wilderness and Wildland designations of the following areas shall be maintained: Willmore Wilderness Area, Kakwa Wildland Park, Whitehorse Wildland Park, Rock Lake Solomon Creek Wildland Park, Brazeau Canyon Wildland Park, Fort Assiniboine Sandhills Wildland Park, and Hubert Lake Wildland Park.



HISTORY AND HISTORICAL RESOURCES

5

Goals:

- **To ensure that historical resources are identified and respected in the decision-making process.**
- **To ensure that our history is understood and respected in the decision-making process.**

5.1 Historical Resources

ISSUES

- Only a fraction of the NES region has been assessed for historical resources and, consequently, the great majority of sites in the area are unrecorded.
- Limited by administrative resources, Alberta Community Development (ACD) is not able to review all proposed developments for their potential to impact historical resources.
- In order to apply the Historical Resources Act evenly across industry, there is a need to develop effective and efficient methods to target proposed developments likely to have historical resources issues early in the planning process.
- A number of approaches are available to aid in the identification of potential development conflicts, including historical resources potential maps; environmental attribute lists that can be used to distinguish areas of high and low historical resources potential, and expanded use of the "Listing of Significant Sites and Areas."
- There is a need to identify informational gaps relative to predicting historical resources potential.

STRATEGIC DIRECTION

Protect and manage sites of cultural and historical importance in the region, commensurate with their relative significance, with community values and economic and other benefits.

ACTIONS

5.1.1 Consult with stakeholders regarding options for historical resources management tools. Key issues to include:

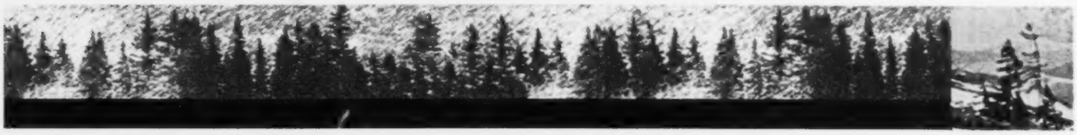
- Identification of appropriate variables for determining historical resources potential;
- Suggested methods for evaluating development plans with regard to the above variables;
- Develop protocols for applying these methods across industry; and
- Reconciliation of a regional strategy with the current patchwork of historical resources management approaches used within Forestry Management Agreement (FMA) areas.

5.1.2 Building on the above consultative process:

- Develop a series of key attributes of practical utility in identifying areas of high and low historical resource potential; and
- Identify and, where possible, address informational gaps relative to predicting historical resources potential.

5.1.3 In consultation with stakeholders, develop protocols for routinely identifying developments with historical resources issues prior to development.

5.1.4 Cooperatively develop processes for working with Aboriginal communities to identify and safeguard cultural and ceremonial sites that may be impacted by development and other activities.



HEALTHY AND SUSTAINABLE ECONOMY

6

Goals:

- **To optimize economic benefits and economic stability through diversification.**
- **To encourage conditions that maintain opportunities for resource development.**

6.1 Economic Diversity And Sustainability

ISSUES

- The economy of the NES and communities within the region is largely dependent on natural resource extraction activities. Diversification would help improve the resilience of the NES region's economy to fluctuations in commodity prices or other external pressures beyond the region's control.
- The policy and regulatory environment that controls where and how activities can occur is a major driver behind the resulting nature and size of the regional economy. The allocation of land to various industrial, agricultural, commercial, municipal and other uses can constrain future options for economic growth and diversification.
- Some stakeholders have expressed concerns that expansion of new economic sectors should not occur at the expense of existing industry sectors.
- Sustainable economic development is dependent on the preservation of 'natural capital,' meaning the ecosystems, species and genetic resources that underlie economic activities. The maintenance of healthy natural systems through effective management is essential to ensure long-term economic potential and opportunities.
- The cyclical nature of primary resource extraction industries often results in economic volatility that will affect the economy and communities. The projected long-term decline in energy production is of particular concern.

STRATEGIC DIRECTION

Provide opportunities and a policy framework that support a sustainable, broad-based and internationally competitive economy.

Preserve the viability of resource extraction and development sectors given their importance to the region's economic stability.

Examine the ability of the region to support new or expanded economic activity in addition to traditional resource extraction industries.

ACTIONS

6.1.1 Develop a system for monitoring and reporting on regional economic indicators on a timely and consistent basis. Produce State of the Region reports on a regular basis in a format that is accessible to the general public.

6.1.2 Identify opportunities and support feasibility and market studies to develop new industries and products in the region, in particular, industries that are synergistic with existing industries, have high value-added components or where the region has distinct comparative advantages.

6.1.3 Explore opportunities for diversification in the following areas:

- Commercial tourism;

- Agriculture;
- Forestry, including enhanced forest management;
- Agroforestry and private woodlot management for multiple resource values;
- Value-added industries;
- Knowledge based activities; and
- Aboriginal enterprises.

6.1.4 Identify the trade-offs required to allow expansion of certain industries and the constraints on overall expansion.

6.1.5 Review existing information technology and communication infrastructure within the region and identify potential constraints and future needs, including training and access in rural areas.

6.1.6 Identify key infrastructure services necessary or desirable to support economic development in the region and facilitate their timely development through effective planning and service delivery programs.

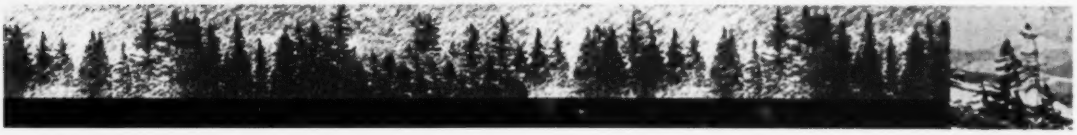
6.1.7 Support initiatives resulting in innovative funding measures for capital investment.

6.1.8 Identify potential opportunities and review policies related to producing new industrial input materials from current waste material.

6.1.9 Develop a regional approach to economic sustainability through establishing an ongoing working partnership with the Grande Alberta Economic Region.

6.1.10 Identify current and future Aboriginal economic uses of the land and complete an economic valuation of those uses for consideration in decision making.

See also 1.7, 2.2, 5.1, 10.1 and Chapter 3 Cumulative Effects Management in the main document for other relevant recommendations.



HEALTHY AND SUSTAINABLE COMMUNITIES

7

Goals:

- **To understand, respect and protect a community's culture and sense of being.**
- **To encourage sustainable resource uses and economic diversity through regional economic activities and cooperation.**

7.1 Community Sustainability

ISSUES

- The mandate of the NES Strategy does not cover all social and community based issues. However, there is a need to recognize that land-use, development, and resource use decisions can have far-reaching impacts on local communities. Socio-economic impacts should be given consideration during planning and decision making and information on community indicators should be monitored over time.
- There is a need to recognize the diversity of the region's cultures, their needs and aspirations, and promote opportunities to strengthen communities' sense of place.
- The regional economy is largely based on primary energy and forest resource extraction as well as agricultural production. Economic cycles and declines in one company or resource sector can lead to community instability.
- The NES region has a lower education attainment rate than the provincial average. Resource-based industries and other sectors, such as commercial tourism, require an educated labour force with the appropriate skills.

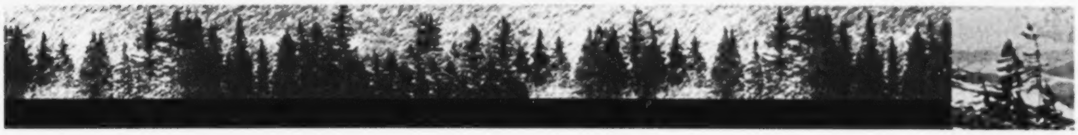
STRATEGIC DIRECTION

Enhance individual and community well-being through sustainable use of the region's natural resources.

Ensure municipal governments are consulted on all developments that may have an impact upon infrastructure and servicing requirements.

ACTIONS

7.1.1 Please see actions 1.6.1, 1.6.2, 1.6.3, 1.6.4, 1.6.5, 1.7.3, 1.7.7, 8.6.1, 10.1.1, 10.1.14 and Chapter 3 Cumulative Effects Management from the main document for related recommendations.



HEALTHY AND SUSTAINABLE ENVIRONMENT

8

Goals:

- **Conservation of biological diversity at the ecosystem, species and genetic levels within the region.**
- **To ensure that the quality of air, water and soil are at healthy levels.**

8.1 Air Quality

ISSUES

- Based on available information, regional air quality is generally good. Local sources of emissions reduce air quality in certain areas. This could constrain future expansion of the industrial, agricultural and municipal sectors in those areas.
- The public and agricultural producers are concerned about sour gas and other emissions related to oil and gas recovery, processing and flaring.

STRATEGIC DIRECTION

Maintain high air quality levels within the region.

ACTIONS

8.1.1 Evaluate existing air quality monitoring within the region.

  - Identify areas that require expanded monitoring efforts in order to provide a comprehensive picture of regional air quality.
  - Ensure that government and industry efforts are coordinated.

8.1.2 Continue coordination of air monitoring through the West Central Airshed Society.

8.2 Water Resources

ISSUES

Surface Water Quality

- There is no comprehensive region-wide water quality monitoring program; however, individual monitoring efforts are in place:
    - Municipalities monitor potable water
    - Alberta Environment regularly monitors ambient water quality in all major rivers.
- There are linkages between water quality and the amount and type of land use within the watershed. Industrial, agricultural, recreational and municipal activities are all potential sources of effluents, erosion and non-point source inputs to surface water and groundwater. To fully understand and predict the impacts of land-use practices on water, additional inventories, monitoring and research are required.
- Inter-basin transfers of water (within or outside the region) are a public policy issue of concern.
- Specific river reaches in the region may be experiencing oxygen stress under some conditions (e.g. low flow, under ice, etc.) due to industrial and municipal effluents. These conditions may represent a constraint to future expansion of these sectors within these river reaches.

Surface Water Quantity

- There are concerns about the supply of freshwater and the potential for aquifer depletion in certain areas.
- Although stream flows are currently adequate to supply all currently foreseeable demands in the region, the potential effects of climate change may influence water quantity in the future.

Groundwater

- There are concerns about the sustainability of the groundwater supply and aquifer depletion in certain areas.
- Groundwater contamination due to industrial effluent discharges and agricultural practices is a potential concern.

General Issues

- Formal water basin plans have not been prepared in the region, although water quality data has been collected for all seven regional sub-basins.
- Lakes and permanent ponds are relatively uncommon within the region and are likely to require special management attention to maintain their environmental, social and economic values.

STRATEGIC DIRECTION

Maintain the quality and quantity of the region's water resources to ensure the protection of the aquatic environment, as well as to ensure continued supply for water users both in the region and downstream.

Manage water resources using an integrated watershed approach, recognizing the linkages between water quality/quantity and activities and disturbances. Take direction from the Water Strategy regarding inter-basin transfers.

ACTIONS

8.2.1 Develop River Basin Management Plans for the major river basins and sub-basins in the NES region. Plans should be developed based on an integrated watershed management approach.

- River basins in the region include: Athabasca river basin – Berland-Wildhay, McLeod, Pembina sub-basins; Smoky river basin – Naraway-Wapiti, Kakwa, Little Smoky, Simonette sub-basins.
- Establish a process to select priority river basins to develop the first plans. The terms of reference for basin plans should include the following points.
    - Estimate current availability and future demand for surface water withdrawals.
    - Utilize appropriate models to determine potential changes in water quality in relation to changes in land management practices within watersheds.
    - Develop reach-specific water quality objectives to ensure the protection of the aquatic environment in river reaches that are potentially under stress (e.g. Athabasca River at Hinton-Grand Rapids, Wapiti River below Grande Prairie, McLeod River at Cadomin-Edson).
    - Provide an assessment of potential constraints that water quality objectives may place on future economic development and, if required, provide options for addressing these constraints.
    - Develop basin-specific watershed management guidelines to provide guidance for Detailed Forest Management Plans.

8.2.2 Increase the extent and consistency of monitoring efforts for water resources. Enhance mechanisms for sharing and synthesizing information across the region.

- Identify a consistent suite of water quality monitoring indicators. Provincial and municipal governments, as well as industry monitoring programs, should collect comparable data.
- Track changes in land use and land management practices over time. Correlate land use measures with surface water and groundwater quality monitoring results.
- Information should be combined into a regional database providing a basis for consistent region-wide monitoring and evaluation of surface water and groundwater quality and quantity.

8.2.3 Estimate current availability, use and future demand for groundwater. Conduct groundwater inventories and hydrogeological studies and assessments in priority areas in the region.

8.2.4 Encourage participation of landowners in a regional groundwater monitoring network. Raise awareness and public support by providing accessible and understandable public reporting of the results.

8.2.5 Encourage alternatives to freshwater (e.g. brackish water) for subsurface injection in the oil and gas sector.

8.2.6 In conjunction with Major River Corridor Strategies (See 8.6.10), carry out riparian ecosystem health assessments in areas of potential concern. Based on the results of riparian health assessments:

- Identify priority areas for remedial action;

- Implement remediation programs to mitigate impacts on riparian areas and waterways. Management options may include voluntary programs (e.g. Cows and Fish Program); and
- Complete cost estimates for priority conservation and restoration projects for riparian areas and aquatic habitats.

8.2.7 Develop and coordinate a research program to determine the potential impact of climate change on water availability in the region. Link to provincial and federal research initiatives.

See also 1.2, 1.4, 1.7, 1.8, 8.3 and 8.6 for other relevant recommendations.

8.3 Soils

ISSUES

- Indicators of soil fertility are relatively poorly developed in the region. 'Soil fertility' is a comprehensive term encompassing a broad range of soil characteristics such as soil structure, organic matter, erosion, contamination and many other elements. While some information on soil erosion and soil carbon is available in specific areas, there is no region-wide soil inventory and monitoring program.

- In the context of climate change and greenhouse gas management, carbon management is an issue of increasing importance.

- Over-use of the regional soil base does not currently seem to be a problem; however, increasing land-use pressure has the potential to degrade soil fertility in specific locations.

- Industrial and recreational activity, poor land management practices and inappropriate handling of nutrients and chemicals can produce localized soil erosion, compaction and contamination with associated impacts on surface water and groundwater quality.

STRATEGIC DIRECTION

Ensure that industrial, agricultural and recreational activities do not reduce soil fertility, with particular emphasis on sensitive areas and highly productive soils. Examine implications of alternative forestry and agricultural practices in relation to carbon management and climate change.

ACTIONS

8.3.1 In key areas of concern within the White Area, design or update an appropriate soil monitoring program that addresses regional soil management issues and provides information on regional soil fertility baseline levels.

8.3.2 Review existing soil guidelines and identify gaps and inconsistencies. Direct industry to provide remediation plans for areas where severe soil degradation has occurred.

8.3.3 Ensure that industry best practices are uniformly applied to avoid soil contamination, compaction and erosion.

8.3.4 Develop regional objectives for carbon management.

See also 1.4 and 8.2 for other relevant recommendations.

8.4 Wetlands

ISSUES

- Alberta has separate policies for wetlands located within the White Area and those in the Green Area. An integrated Wetlands Policy that addresses all wetlands has been prepared and is awaiting final approval for release.
- A large percentage of Alberta's original wetlands in the White Area have been lost to urban and rural development and are under continued pressure from agricultural expansion and other land-use activities.

STRATEGIC DIRECTION

Protect and enhance the region's wetlands, both as a biodiversity conservation strategy and a water quality and quantity management strategy.

ACTIONS

8.4.1 Encourage the retention of permanent and ephemeral wetlands wherever possible.

8.4.2 Promote best practices for the protection of stream tributaries and wetlands. Emphasize first and second order streams in the White Area.

8.4.3 Inventory and assess the status of the region's wetland ecosystems to facilitate their inclusion in natural resource and land-use planning processes. Develop wetland conservation and management objectives based on the results of these inventories.

8.4.4 Encourage the completion and release of the provincial Wetlands Policy. Ensure that regional objectives are consistent with provincial strategy and direction.

8.4.5 Develop education programs to increase public understanding of the need to conserve wetlands and their importance for water quality, flood protection and biodiversity. Encourage and assist landowners, communities and industry to manage and protect wetland resources. Consider the incentive mechanisms to encourage conservation.

8.5 Fisheries

ISSUES

- There is limited information available on fish population levels, distribution and habitat for most individual streams.
- Bull trout and Arctic grayling are two sensitive species occurring in the region that may require special management.
- New road construction in formerly inaccessible areas can lead to an increase in sport fishing, placing additional pressure on fish stocks.
- Roads and stream crossings can have a significant impact on fish habitat. There is insufficient information on the density of roads, the number and types of crossings, and the types of roads within watersheds in the NES region to accurately forecast their impacts.
- There is limited knowledge about the cumulative effects of all recreational, agricultural and industrial activities on fish populations.

STRATEGIC DIRECTION

Protect and manage fish habitat and fishing pressure in the region to maintain sustainable fish stock levels.

ACTIONS

8.5.1 Continue and enhance existing monitoring of fish populations. Consider potential impacts on fish habitat in planning and assessment of land-use activities. Develop appropriate management strategies to avoid or mitigate impacts.

8.5.2 Conduct a joint industry/government review of water crossing guidelines, and a comprehensive water-crossing inventory within the Green Area to identify the number and types of crossings (ford, culvert, bridge) and the types of roads (dry weather, all weather, paved) within watersheds. Identify and rectify problem crossings.

8.5.3 Collate spatial and non-spatial information on fishing pressure and trends. Consider reduction of access or other management options in areas experiencing declines in fish populations related to intense fishing pressure.

8.5.4 Prepare Bull trout and Artic grayling management plans for key streams and rivers. Consider public access management as a management tool.

8.6 Biodiversity

ISSUES

- There is growing public interest and concern with the conservation of biodiversity and the sustainability of biodiversity resources, particularly in the context of industrial expansion and growth.

- The broad-scale, or "coarse filter" approach to biodiversity management with consideration of natural disturbance regimes is a currently accepted philosophy for sustainable forest management in Alberta. This concept will be challenging to apply in a regional context across multiple jurisdictional boundaries such as the White and Green Areas, different FMAs, private and public lands.

- Baseline information on biodiversity is still very limited, making it difficult to develop meaningful goals and objectives.

- Changes to biodiversity over time cannot be tracked without a comprehensive monitoring program measuring elements at multiple scales.

- Conservation of biodiversity is a regional issue and strategic objectives are required that apply across both the Green and White Areas. Specific guidelines and management strategies may differ between the two areas due to the different activities and land tenure systems involved.

- There is no regional mechanism for public reporting and education about biodiversity issues.

- The following species that occur in the region are designated as "At Risk" (*The General Status of Alberta Wild Species 2000*, Alberta Environment/Alberta Sustainable Resource Development):
    - Trumpeter Swan;
    - Peregrine Falcon; and
    - Northern Leopard Frog.

- The accidental or planned introduction of exotic and modified species into the region, particularly those that are invasive, has the potential to adversely impact native species.

- Human intervention has altered natural forest fire rates, producing a change in natural landscape patterns. Fire control and forest harvesting activities over the last 50 years have created high levels of old forest in some areas, and fragmented old forest habitat in others.

- Although fire control has been very effective, wildfire cannot be completely eliminated from the region. Fire losses need to be considered in calculations of sustainable timber harvest levels at the regional scale.

- Burnt trees and residual patches of vegetation in disturbed areas provide habitat for species and play important roles in forest regeneration. The amount of salvage logging after forest fires and the percentage of residual vegetation in forest harvest blocks may be deviating from natural patterns.

- Mountain Pine Beetle is continuing to expand into the region and has the potential to create widespread disturbance with a significant impact on forest harvesting sustainability. Detailed information on the actual incidence of the beetle and other forest pests is currently lacking.

- Biodiversity management must consider the effects of natural disturbance regimes. Coordinated planning at the regional level is required to meet both the broad-scale objectives and the management objectives within finer-scale landscape units.

- There is a lack of reliable and consistent data related to natural disturbance patterns at both the regional and sub-regional levels.

STRATEGIC DIRECTION

Conserving biodiversity requires attention to different scales and levels of biological organization. Taken together, the recommended strategic directions seen in the following table constitute a comprehensive framework for biodiversity at the ecosystem, species and genetic levels.

Conservation of Biological Diversity	**Ecosystem Diversity**	**Representative Distribution of Ecosystems**	Maintain a diversity of ecosystem types and local elements within the natural range of variability
			Maintain landscape connectivity
			Protect unique and rare landscape elements
	Species Diversity	**Wildlife Habitat**	Maintain wildlife habitat
			Maintain fish and aquatic species habitat
		Species at Risk	Protect or enhance habitats for species at risk
		Rare and Unique Vegetation	Protect rare vegetation
		Species Richness and Diversity	Maintain species richness and diversity on the landscape
	Genetic Diversity	**Reservoir of Genetic Diversity within Species**	Ensure genetic diversity is maintained

STRATEGIC DIRECTION

Manage landscapes and vegetation in the region based on a broad-scale "coarse filter" approach that considers natural disturbance regimes to achieve biodiversity objectives.

Maintain landscape and watershed connectivity.

ACTIONS

8.6.1 Ensure that potential cumulative impacts on regional ecosystems, rare or threatened species, communities and landscape elements, and other biodiversity issues are appropriately addressed in resource planning, development approval and infrastructure development processes.

8.6.2 Utilize or enhance existing databases (e.g. ANHIC) to provide a centralized regional system that consolidates information about key areas of concern for biodiversity (e.g. rare and significant ecosystems, communities, species and landscape elements).

8.6.3 Develop indicators and establish a regional biodiversity monitoring program.

- Consider linkages with existing provincial and local programs (e.g. ANHIC).
- Evaluate whether components of the Alberta Forest Biodiversity Monitoring Program design could provide a basis for a regional biodiversity monitoring program.

8.6.4 Develop a strategy for conservation and restoration of biodiversity on both private and public lands in the White Area.

- Develop guidelines for rehabilitation of wetlands, riparian areas and other natural habitat.
- Identify options to promote conservation of biodiversity on private lands. Management options that may be considered include voluntary programs (e.g. Cows and Fish), as well as tax incentive or compensation programs.
- Develop guidelines for appropriate land management practices that minimize erosion and the input of nutrients and chemicals into waterways.

8.6.5 Develop a framework for aquatic biodiversity management.

- Develop guidelines for the protection of aquatic and riparian habitat and species.
- Ensure that water management processes include consideration of aquatic biodiversity issues.

8.6.6 Develop broad-scale landscape pattern objectives for natural sub-regions that consider natural disturbance regimes and reflect the natural range of variability. Examples include disturbance pattern and patch size, landscape connectivity, species composition and age class distribution. Implement objectives through detailed forest management plans and Sustainable Landscape Plans (SLPs). Develop policies and processes for implementing these objectives across multiple Forest Management Agreement areas.

8.6.7 Incorporate natural disturbance regimes and landscape objectives into land management and planning across the region.

- Sub-regional and operational level plans such as Detailed Forest Management Plans should reflect regional objectives for natural disturbance patterns.
- Manage the landbase excluded from timber harvesting to approximate natural disturbance regimes. Strategies should be developed in partnership between government and FMA holders. Consider the use of tools such as prescribed burning or selective harvesting.
- Regional fire management planning must incorporate regional natural disturbance objectives. This may include identification of ecological wildfire areas where wildfires will be allowed to burn. Consider the use of the Whitecourt Landscape Fire Management Plan as a template.
- Protected areas should include natural disturbance regimes in management planning and should ensure that fire and pest management within the protected area is consistent with the overall regional strategy. While protected areas may be more tolerant of fire and pests, appropriate action will be taken when necessary to protect regional industries.

8.6.8 Establish objectives for non-salvage of natural disturbances and for residual structure within harvest areas for each natural sub-region. These objectives will recognize both the importance of fibre recovery as well as the importance of naturally disturbed habitat and residual vegetation for biodiversity. Utilize a sliding scale for salvage logging, whereby the percentage removed is reduced as the area of burn increases in the region.

8.6.9 Conduct a region wide assessment of general landscape connectivity, movement corridors for key species and connectivity requirements for protected areas. Provide direction from these studies to the development of Regional Landscape Pattern Objectives. (See 8.6.6)

8.6.10 Develop results-based River Corridor Management Protocols to protect values unique to valley and riparian systems. These would apply within 2 kilometers of major rivers. The protocols should identify objectives for broad-scale landscape connectivity, wildlife habitat, recreation and wilderness. While continuing to allow resource extraction, the protocols would contribute to achieving multiple values and goals by addressing the following elements:

- Water quality;
- Connectivity and species movement;
- Riparian area management;
- Visual quality objectives;
- Wilderness characteristics;
- Forest harvesting;
- Appropriate industrial activity;
- Critical wildlife areas; and
- Relationship to basin planning and detailed forest management planning.

8.6.11 Identify appropriate regional indicators and monitor at consistent regular intervals vegetation and land cover conditions and trends.

8.6.12 Develop education programs to increase public understanding of the need to maintain natural disturbance regimes and the linkages between biodiversity conservation and natural disturbance regimes.

8.6.13 Continue support for natural disturbance research (e.g. Foothills Model Forest).

8.6.14 Ensure reclamation standards specify the long-term establishment of endemic species.

8.6.15 Aggressively pursue the removal of noxious weeds in the region.

See also 1.10 for other relevant recommendations.

8.7 Caribou

ISSUES

- Populations of caribou are declining regionally as well as provincially. In Alberta, Woodland caribou are designated as threatened (*The General Status of Alberta Wild Species 2000*, AENV/SRD). COSEWIC (the Committee on the Status of Endangered Wildlife in Canada) also designates the Woodland caribou as threatened in Alberta.
- Woodland caribou require large, well-connected stands of old forest. Current and projected levels of industrial activity are heavily impacting these landscapes.
- One of three herds (Little Smoky) is currently in decline. A second herd (A La Peche) has failed to return to their forested winter range for the last six years.
- The Operating Guidelines for Industrial Activity in West Central Alberta are suitable for mitigating the effects of individual industrial activities on Woodland caribou, but they do not adequately address cumulative effects of all industries at a landscape level.
- Landscape management changes necessary for Woodland caribou conservation may result in a reduction of industrial opportunity either in terms of location, timing or both.

STRATEGIC DIRECTION

Manage all caribou herds on a herd-by-herd basis through the maintenance of sufficient, effective habitat to maintain herd populations at approximately current levels.

ACTIONS

8.7.1 Prepare Sustainable Landscape Plans (SLPs) for key caribou ranges located outside protected areas. (See map below) These plans will address cumulative effects and manage all development activities in order to aid the continued viability of each caribou herd. Industrial activity will occur within the caribou management areas. The plans should:

- Consider public access management, habitat alteration and predation pressure as primary concerns;
- Set acceptable targets for the amount, type and location of industrial activity (cumulative effects) in order to provide a sufficient amount of effective caribou habitat;
- Require an Integrated Landscape Management (ILM) plan as an interim measure for the 2004 winter drilling season, involving government and all industrial users;
- Coordinate harvest plans of all FMA holders;
- Consider conditions on pace of development, footprint and integrated planning requirements. Encourage cooperative efforts between companies such as unitization, pooling or other methods of reducing redundant development infrastructure;

- Consider adoption of aggregated disturbance patterns that maximize large patch retention and minimize infrastructure development to ensure caribou habitat objectives are met. Where appropriate, consider permitting outlier development of energy outside of main disturbance areas;
- Maintain seasonal migration routes;
- Restrict public access within the caribou zone where necessary (consider legislation to allow this);
- Identify management requirements to address population levels of predators and other wildlife (e.g. alternate prey, predator control);
- Provide for a plan review and revision process; and
- Aggressively pursue fire control.

8.7.2 Encourage minimal and temporary access development.

- Require remote operation of oil and gas facilities where feasible.
- Do not approve industrial access duplication.
- Require winter industrial access wherever feasible.

8.7.3 Continue to support caribou research and monitoring.

8.7.4 Develop public education programs regarding the need for public access management, minimization of the industrial footprint, and the maintenance of sufficient old forest within the caribou management areas.

8.7.5 Align the regional caribou strategies with the provincial caribou strategy.

8.7.6 Utilize a wide range of management interventions including changes to harvest patterns, aggressive wildfire management, predator control and restricted public access.

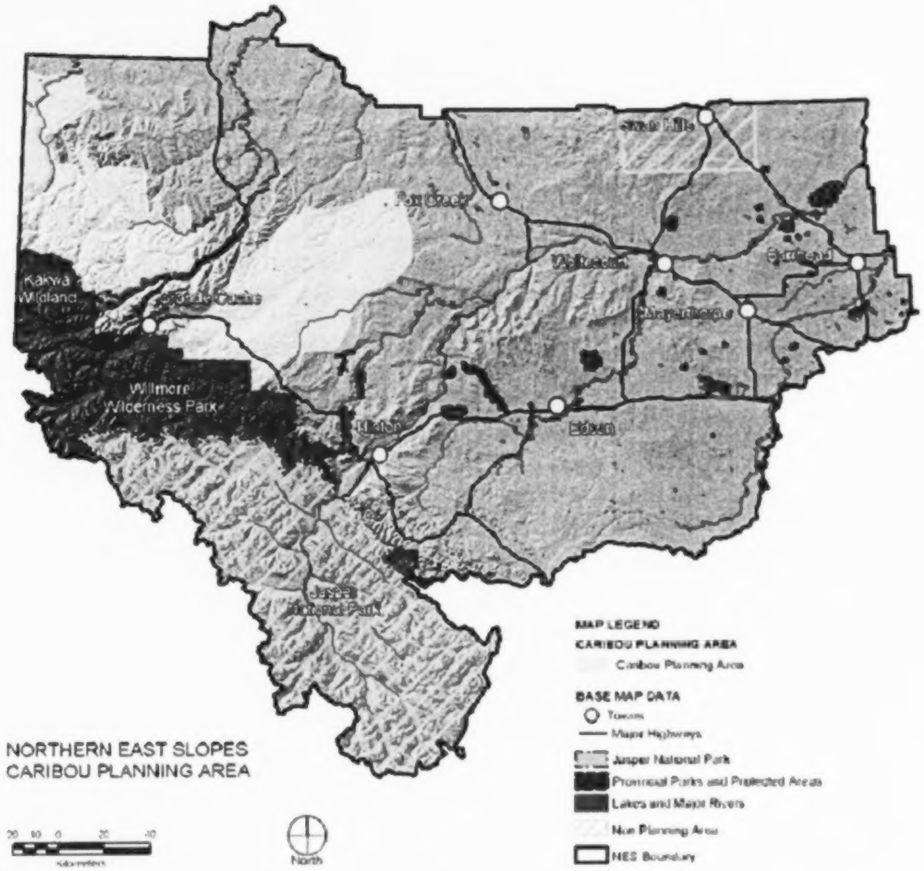

Swan Hills
Fox Creek
Whitecourt
Barrhead
Mayerthorpe
Kakwa Wildland
Grande Cache
Willmore Wilderness Park
Hinton
Edson
Jasper National Park
MAP LEGEND
CARIBOU PLANNING AREA
Caribou Planning Area
BASE MAP DATA
Towns
Major Highways
Jasper National Park
Provincial Parks and Protected Areas
Lakes and Major Rivers
Non Planning Area
NES Boundary
NORTHERN EAST SLOPES
CARIBOU PLANNING AREA
20 10 0 20 40
Kilometers
North

Figure 15: NES Caribou Planning Area.

8.8 Grizzly Bear

ISSUES

- Grizzly bears occur at low density throughout a significant proportion of the NES region and use large land areas for their home ranges. Increasing industrial and recreational access has the potential to threaten regional Grizzly bear populations over the next several decades.
- At the present time, it is not known whether regional Grizzly bear populations are stable, increasing or decreasing. *The General Status of Alberta Wild Species 2000* (AENV/SRD) ranks Grizzly bears as a species that "may be at risk" and SRD indicates that the status of this species is currently under review. A Provincial Grizzly Bear Recovery Plan is now in progress.
- Research results indicate that both illegal and accidental killing of Grizzly bears within the NES region is a serious conservation threat and management concern.
- Access management is one of the most important considerations for land-use planning in Grizzly bear habitat within the NES landbase.

STRATEGIC DIRECTION

Allow for the Grizzly bear population to be sustained in the region through cooperative management, reduction in human caused mortality and the maintenance of sufficient effective habitat.

ACTIONS

8.8.1 Prepare access management plans for selected areas of Grizzly bear habitat.

8.8.2 Complete spatially explicit delineation of important Grizzly bear habitat in the region.

- Identify key habitat areas and determine probability of bear occurrence on the landscape.
- Identify important Grizzly bear travel routes at the landscape scale using models developed by the regional research program.
- Ensure that Detailed Forest Management Plans address broad-scale habitat connectivity and corridor requirements between key Grizzly bear habitat patches.

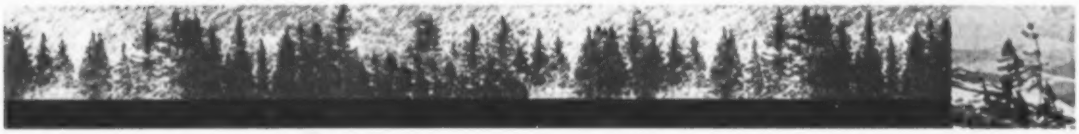
8.8.3 Reduce human caused mortality. Utilize education, restriction of public access in key Grizzly areas, enforcement activity and other methods. In important Grizzly areas, restrict access created by industry to industrial use only. Enforce unauthorized access through legislation.

8.8.4 Encourage rapid reclamation and reforestation of roads no longer required for the original purpose.

8.8.5 Link the regional approach to Grizzly bear management with the Yellowhead Ecosystem Grizzly Bear Conservation Framework and the Provincial Grizzly Bear Recovery Plan.

8.8.6 Continue support for the Regional Carnivore Management Group. The Group should provide advice to Grizzly bear sub-regional management. Ongoing research and monitoring results should be used to inform management and planning that integrates Grizzly bear habitat needs into land-use decisions.

8.8.7 Conduct long-term monitoring to track the impact of ongoing land-use activities on Grizzly bear populations. Ensure results are adaptively incorporated into management.



ABORIGINAL WAY OF LIFE

9

Goals:

- **To provide opportunities for Aboriginal communities to determine how they wish to participate in land and natural resource management.**
- **To provide opportunities for Traditional knowledge/ Aboriginal wisdom to be incorporated into land and resource management decisions as it relates to integrated resource management.**
- **To ensure that government, industry and other stakeholders respect Aboriginal culture, values and traditions as they relate to the land and other natural resources.**
- **To provide opportunities for continued use of land and resources by Aboriginal people.**

9.1 Aboriginal Way of Life

The Regional Steering Group, as recommended by the Aboriginal Task Team, integrated what was heard from Aboriginal communities into the strategy, particularly the aspects of Aboriginal use of land and traditional knowledge. The contents of this chapter are a reflection of the views and comments expressed by the Aboriginal people of the region during the community information sessions held as a component of the strategy's communication process.

ISSUES

- The NES group of First Nations and other Aboriginal communities are located in areas with high industrial activity and are most susceptible to the environmental, social and economic impacts this activity brings. Pressing social conditions, such as high drop-out and unemployment rates, continue to plague Aboriginal communities, limiting their ability to "successfully" participate in today's surging economy.
- Aboriginal people in the region want to be included in decision-making processes that affect them, such as the designation of protected areas. Historically, Elders and Aboriginal trappers have not been adequately involved in these processes.
- The protection of traditional sites, including burial sites, ceremonial sites and traditional berry-picking and harvesting sites for herbs and medicines, is integrally important to the preservation of the Aboriginal culture and heritage.
- The protection of information regarding location of burial and ceremonial sites and other sacred and/or significant locations is of utmost concern to Aboriginal communities.
- Aboriginal communities are concerned about rapid change to their traditional way of life. Aboriginal uses of the land are perceived to be displaced by industrial and recreational (i.e. ATV) activities. Natural habitats are being affected, thereby limiting and even eliminating traditional hunting, fishing and trapping areas.
- Aboriginal communities are concerned with the recovery and reclamation of damaged sites, re-introduction of decimated species, and controlling impacts of foreign species in the ecosystem.

STRATEGIC DIRECTION

Integrate Aboriginal community issues about traditional sites, traditional land use and environmental quality into planning and management processes.

ACTIONS

9.1.1 Develop appropriate protocols to ensure the confidentiality of traditional knowledge while ensuring that the information is used to inform planning and decision making.

9.1.2 Consider appropriate measures for protection or rehabilitation of traditional use areas and sites as part of all regional and operational level planning and management processes.

9.1.3 Access planning should consider important traditional use areas and sacred sites.

9.1.4 Implement commitments and agreements between industry, government and Aboriginal communities. These must be enforceable and have built-in accountability provisions through an unbiased forum.

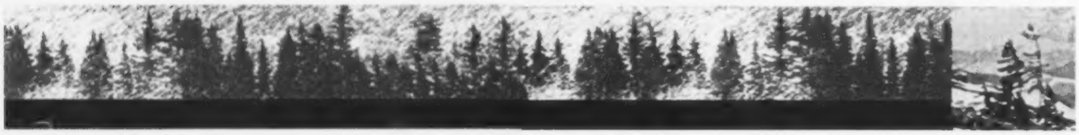
9.1.5 Develop a database, for integration in a centralized regional system, that identifies Aboriginal holders of specialized traditional knowledge for application by CETS in research and analysis. (See Chapter 3 Cumulative Effects Management for information regarding CETS.)

9.1.6 In the development of a regional monitoring strategy for air, water and soil, consider Aboriginal cultural, spiritual and sustenance uses of these resources.

9.1.7 Incorporate the traditional knowledge and information gathered through the Northern River Basins Study and related initiatives in planning for the region.

9.1.8 Support foothills model forest traditional use initiatives and other similar initiatives.

9.1.9 Establish an Elder's Council to provide advice regarding the implementation of IRM initiatives within the NES region.



10

ABORIGINAL CAPACITY BUILDING

Goals:

- **To assist Aboriginal communities to build capacity to participate in integrated resource management initiatives through education, training and financial support.**
- **To assist government, industry and other key stakeholders to build capacity about Aboriginal issues with regard to land, resources and Aboriginal culture.**

10.1 Aboriginal Capacity Building

The Regional Steering Group, as recommended by the Aboriginal Task Team, integrated what was heard from Aboriginal communities into the strategy, particularly the aspects of Aboriginal use of land and traditional knowledge. The contents of this chapter are a reflection of the views and comments expressed by the Aboriginal people of the region during the community information sessions held as a component of the strategy's communication process.

ISSUES

- Aboriginal communities are at different stages in their understanding of western concepts of resource, land and environmental management. All communities have indicated a need to further develop planning and management expertise. Capacity building and "levelling the playing field" for Aboriginal communities involved in the NES Strategy is a prevailing theme and has been raised on a consistent basis.
- Aboriginal communities require enhanced education and skills to facilitate their participation in the regional resource sector.
- There is a long-standing and deeply rooted lack of trust between Aboriginal communities, governments and resource developers in Canada, which impacts the development of this Strategy. The roots of this mistrust can be found in the outstanding grievances regarding the Treaties and NRTA and recognition of traditional lands. The problem is aggravated by jurisdictional conflicts and frustration over failed agreements and promises, resulting in apathy within Aboriginal communities, as well as concern over who will monitor and maintain the strategy.
- Effective consultation with Aboriginal communities in the NES Strategy and other similar processes requires an understanding of the issues of "representation" vs. "participation." Within the Aboriginal world, representation does not exist – one person or one community cannot speak for or on behalf of another, as each community has its own set of concerns and traditional ways of life. This creates issues for government and industry as they work towards developing culturally sensitive protocols.
- Aboriginal participation is impacted by the split between communities along Bill C-31, Treaty, non-status and Métis lines.
- The pressure of timelines that do not work for Aboriginal communities influences their ability to effectively participate in the NES planning process.

STRATEGIC DIRECTION

Ensure that Aboriginal communities share and contribute equally in management, development and prosperity of the region.

ACTIONS

10.1.1 Organize a two- or three-day forum focused on "levelling the playing field" for Aboriginal communities involved in the NES Strategy. Include representatives from each of the First Nations and Aboriginal communities outlining the work to date on the NES Strategy and to begin mapping out "Next Steps."

10.1.2 Consider the development of an Aboriginal Resource Team with expertise in treaty issues, biophysical and socio-economic considerations, and legal implications. This group would be available to each community to help develop positions on each of the issues.

10.1.3 Implement provisions for an adequate voice for Aboriginal concerns and issues, either through the RSG, Aboriginal Task Team, or other representative body, both during the initial policy development phase and the decision-making body that exists upon completion of the prototype. It is imperative that this body be composed of equal representation from each of the First Nations and Aboriginal stakeholder groups.

10.1.4 Delineate clearly the appropriate jurisdictional authority for each Aboriginal community and follow accepted protocols of communication and flows of accountability when planning further consultation on the NES Strategy, as well as any similar strategies that may be forthcoming. This will help to fully engage both First Nations and non-Treaty Aboriginal communities to the greatest possible extent.

10.1.5 Investigate models used by other provinces and territories for Aboriginal participation in this type of process and apply learnings.

10.1.6 Ensure an adequate forum for feedback relating to process issues in order to contribute to an overall model for Aboriginal participation in similar processes in the future.

10.1.7 Develop a common use and understanding of terminology and practices for the following type of concepts: traditional lands, historical sites, protection, preservation, representation, participation, land use, natural resource management, etc.

10.1.8 Encourage the development of educational processes that integrate Elder and Youth concerns, as well as increase understanding between Aboriginal and non-Aboriginal communities.

10.1.9 Organize annual or semi-annual seminars on the different industries, including appropriate government agencies, to enhance trilateral communication with Aboriginal communities and provide an opportunity for discussion and learning.

10.1.10 Develop a protocol for information sharing that incorporates Aboriginal wisdom and preserves its cultural context in land-use decisions.

10.1.11 Translate the NES Strategy into Aboriginal languages to improve effective communication.

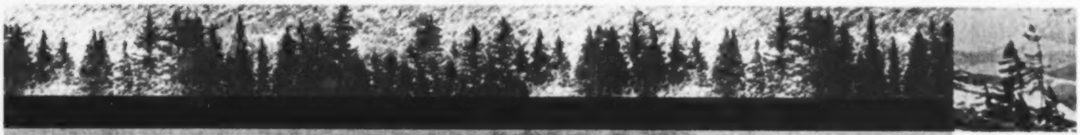
10.1.12 Provide opportunity for Aboriginal communities in the region to participate in IRM and in the implementation of this Strategy.

10.1.13 Develop a process that defines the level of government participation required in implementation of the Aboriginal component of the strategy.

10.1.14 Facilitate cross-cultural awareness of the values and needs of Aboriginal communities, government and industry in the region.

List of Acronyms used in Appendix D

AAC	Annual Allowable Cut
ACD	Alberta Community Development
ACR	Alberta Chamber of Resources
AENV	Alberta Environment
ANHIC	Alberta Natural Heritage Information Centre
ATV	All-Terrain Vehicle
CEMS	Cumulative Effects Management System
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
DFMP	Detailed Forest Management Plan
FMA	Forest Management Agreement
GIP	Grazing Integration Plan
ILM	Integrated Landscape Management
IRM	Integrated Resource Management
MOU	Memorandum of Understanding
NES	Northern East Slopes
OHV	Off-Highway Vehicle
RSG	Regional Steering Group
SLP	Sustainable Landscape Plan
SRD	Alberta Sustainable Resource Development



APPENDIX E
IMPLICATIONS

Implications of the NES Strategy

Achieving the regional vision and goals will require change – changes to government policy and decision making, changes to industry planning and operations, and changes in how communities participate in land and resource management. Some investment of time and resources will be required to implement a new approach and address the multiple, interconnected issues facing the region. New approaches will also lead to major benefits for all involved, including more effective and streamlined regulation, greater certainty and sustainability for industry and commercial interests, stability for communities, as well as tangible improvements in environmental protection and management.

Economic and social systems are continually evolving, making it difficult to accurately predict how the NES Strategy will shape future conditions. However, the Regional Steering Committee has considered and discussed the reasonably foreseeable consequences of implementing major elements of the NES Strategy. The following table outlines how the proposed recommendations are expected to affect government, industry, communities and the regional environment.

Table 4: Implications of Major NES Strategy Elements for Stakeholders and for Environmental Sustainability.

IMPLICATIONS FOR GOVERNMENT	IMPLICATIONS FOR INDUSTRY	IMPLICATIONS FOR COMMUNITIES	ENVIRONMENTAL IMPLICATIONS
Cumulative Effects Management System			
Collaborative Partnership (CP)			
• Change in focus from project specific CEA to regional cumulative effects management.	• Requirement to participate in regional management.	• Increased input for communities and stakeholders into regional management.	• Better understanding and control of environmental impacts.
Cumulative Effects Technical Support Group (CETS)			
• Change in focus from project specific CEA to regional cumulative effects management. • Increased government monitoring.	• Reduced effort and cost for EIA for project proponents. • Coordinated information management.	• Better management of cumulative effects particularly as it relates to small projects.	• Better understanding and control of environmental impacts.
Integrated Approval Process			
• Consistent with direction of regulatory reform from project-based assessment to cumulative effects management. • Costs of realignment of government systems to focus on cumulative effects. • Government focus should be on regional scale.	• Reduced effort and cost for EIA for project proponents. • Project proponents still responsible for describing specific impacts of their project to regulators.	• Better management of cumulative effects, particularly as it relates to small projects.	• Better understanding and control of environmental impacts.

Table 4: Implications of major NES Strategy Elements for stakeholders and for environmental sustainability.

IMPLICATIONS FOR GOVERNMENT	IMPLICATIONS FOR INDUSTRY	IMPLICATIONS FOR COMMUNITIES	ENVIRONMENTAL IMPLICATIONS
Planning Framework including Sustainable Landscape Plans (SLPs)			
• Planning framework would provide structure and consistency to the current *ad hoc* assortment of planning initiatives.	• Coordinated information management.	• Increased input for communities and stakeholders into sub-regional management.	• Improved management of cumulative effects.
Increased Fire Management			
• Consideration of other values in fire management and planning. • Short-term costs of fire management may increase; long-term costs may decrease.	• Greater assurance of sustainability for forest industry.	• Decreased risk of fire losses for communities.	• Increased likelihood of caribou survival.
Linking Management of Protected Areas and Surrounding Landbase			
• More cooperation required between agencies and between provincial and federal (Parks) government. • Concern that this will lead to "buffers" around protected areas.	• Decreased risk of wildfire and Mountain Pine Beetle infestation. Greater assurance of sustainability for forest industry.	• Decreased risk of fire losses for communities.	• Greater planning and effort required to maintain natural ecological processes.
Maintain Large Areas with Natural Characteristics			
• Fits well with natural disturbance management model. • Could involve directing the timing of resource development (e.g. synchronize forestry and energy extraction). May be opposition in some sectors of government.	• Adapt and coordinate planning processes to meet regional pattern objectives. • May be unknown opportunity cost if timing of resource development is directed by government.	• Availability of natural areas for backcountry recreation.	• Conservation of ecosystem and habitat connectivity.
Management of Recreational Off-Highway Vehicle Use			
• May require changes to Eastern Slopes Policy and IRP to support OHV use in selected areas. • Management of OHV use by regulation over much of region. • Costs of access planning and enforcement.	• Protection of resource values and addresses safety issues by restricting OHV access in specified areas.	• Public split on this issue. • Economic opportunities for tourism. • Community recreation access. • Protection of sensitive cultural sites.	• Maintenance of biodiversity values. • Increased likelihood of long-term survival of caribou and grizzly.

Table 4: Implications of major NES Strategy Elements for stakeholders and for environmental sustainability.

IMPLICATIONS FOR GOVERNMENT	IMPLICATIONS FOR INDUSTRY	IMPLICATIONS FOR COMMUNITIES	ENVIRONMENTAL IMPLICATIONS
Management of Recreational Random Camping			
• Costs of access management and enforcement. • Government is generally no longer building recreation facilities. May be opportunity for partnering.	• Public use of old industrial access (roads, seismic lines, etc.) is a major part of cumulative impacts of industrial activity.	• May be negative public reaction to decreased access, particularly in areas where industry is allowed to go.	• Protection of ecosystems and species. • Reduced human-caused fires.
Consideration of Aboriginal Traditional and Cultural Values			
• Consistency with existing provincial "Aboriginal Policy Framework." • May restrict lands available for development.	• Increased certainty of access. • Additional planning considerations.	• Greater cultural sustainability.	• Increased application of traditional ecological knowledge.
Enhanced Forest Management in Forest Industry			
• Consistent with existing provincial framework.	• Ability to make up for AAC that is "lost" to other uses such as tourism or habitat protection.	• Greater economic stability.	• Changes to biodiversity in localized areas.
Harvest Flexibility in Forest Industry			
• Requires a policy change and changes to Timber Management Regulation and all FMAs. Cut control is currently over 5-year period, not 20.	• Companies can more fully take advantage of commodity price volatility.	• May exacerbate the effect of market swings on communities.	• Better approximation of natural range of variation of disturbance.
Expand Regional Tourism Industry			
	Providing a Landbase for Tourism		
• Policy change to encourage tourism development in the Green Area. • Increase priority for tourism relative to extractive use. • Possible changes to regulation to withdraw existing rights and provide compensation.	• Potential minor impact on AAC. • Small increase in costs for changing practices to enhance tourism values in landscape.	• Increased economic potential for tourism industry. Greater long-term stability for regional economy. • Potential tax benefits. • Potential cost of servicing remote facilities.	• Increased number of people in backcountry.

Table 4: Implications of major NES Strategy Elements for stakeholders and for environmental sustainability.

IMPLICATIONS FOR GOVERNMENT	IMPLICATIONS FOR INDUSTRY	IMPLICATIONS FOR COMMUNITIES	ENVIRONMENTAL IMPLICATIONS
Cottage Development in Tourism Nodes			
• Change in policy to convert public land to private land.	• Reduced conversion of agricultural productive land use to residential use. • Potential for increased scrutiny of industrial activities.	• Potential tax benefits. • Economic diversification in rural areas. • Potential for permanent/seasonal resident conflict in values.	• Increased fire risk. • Potential for increased direct and indirect environmental effects.
Development of Aboriginal, Heritage and Farm Tourism Experiences			
		• Economic diversification.	
Forestry-Agriculture Joint Ventures e.g. Agroforestry, Woodlot Forestry			
• Requires no policy change.	• Additional source of fibre for pulp mills. • Depends upon economic feasibility for the parties involved.	• Economic diversification in rural areas.	
Tax Incentive and Voluntary Programs for Biodiversity, Water and Soil Protection			
• Complexity of regulating system.	• Minimal cost.	• Greater involvement of local communities and landowners.	
Coarse Filter Biodiversity Management			
• Supported by current approach to forest management. Would involve extending the direction to activities other than forestry. • Need to develop White Area biodiversity objectives. • Program costs, e.g., for landowner outreach.	• Additional planning costs to industry. • Economic and operational implications not well understood for sectors other than forestry.	• Large cut blocks may create public opposition. • Opportunities for the inclusion of Aboriginal knowledge.	• Better achievement of biodiversity objectives.
Caribou Management			
• Impose mandatory Integrated Landscape Management in specified areas. • Predator control as a management tool. • Increased costs for sub-regional planning, access management and public education.	• Increased effort required to implement Integrated Landscape Management.	• Potential negative public reaction to predator control. • Restriction of public access on industrial roads. Potential negative public reaction to restricted access.	• Increased likelihood of caribou survival.

Table 4: Implications of major NES Strategy Elements for stakeholders and for environmental sustainability.

IMPLICATIONS FOR GOVERNMENT	IMPLICATIONS FOR INDUSTRY	IMPLICATIONS FOR COMMUNITIES	ENVIRONMENTAL IMPLICATIONS
Grizzly Bear Management			
• Impose mandatory Integrated Landscape Management in specified areas. • Increased costs for sub-regional planning, access management and public education.	• Minimal cost to industry. • Increased effort required to implement Integrated Landscape Management.	• Restriction of public access on industrial roads. Potential negative public reaction to restricted access.	• Increased likelihood of grizzly survival.
Biodiversity Monitoring Program			
• Significant costs. • Requires long-term commitment to be successful.	• May be required to share cost with government. • Few companies participating in provincial program to date.		• Greater certainty of biodiversity status.
River Corridor Strategy			
• Changes in policy required to restrict certain activities within river corridors.	• May require modification to activities near river corridors.	• River-based recreational opportunities. • Greater protection of water quality.	• Protection of riparian and lowland habitat. • Maintenance of ecosystem connectivity and movement corridors.
River Basin Planning			
• Consistent with provincial Water Strategy, which will likely support river basin plans throughout the province.	• Need to provide information on water consumption levels and projected future needs.	• Greater assurance of high water quality and adequate supply.	• Improved management of cumulative effects on river systems.
Coordination and Expansion of Air, Water and Soil Monitoring Programs			
• No policy change required. • Expand investment into monitoring and coordination of efforts (e.g. with industry programs).	• Expand investment into monitoring and coordination of efforts (e.g. with government programs).	• Greater assurance that air, water and soil quality are at healthy levels.	• Protection of air, water and soil quality.